APPENDIX A
(1 of 2)

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT7282808

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	RELEASE OF SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
CORTLAND CAPITAL MARKET SERVICES LLC	04/01/2022

RECEIVING PARTY DATA

Name:	HILCO PATENT ACQUISITION 56, LLC
Street Address:	401 N. MICHIGAN AVE., SUITE 1630
City:	CHICAGO
State/Country:	ILLINOIS
Postal Code:	60611
Name:	BELL SEMICONDUCTOR, LLC
Street Address:	401 N. MICHIGAN AVE., SUITE 1630
City:	CHICAGO
State/Country:	ILLINOIS
Postal Code:	60611
Name:	BELL NORTHERN RESEARCH, LLC
Street Address:	401 N. MICHIGAN AVE., SUITE 1630
City:	CHICAGO
State/Country:	ILLINOIS
Postal Code:	60611

PROPERTY NUMBERS Total: 131

Property Type	Number
Patent Number:	7996047
Patent Number:	7412263
Patent Number:	7702363
Patent Number:	7945284
Patent Number:	7945285
Patent Number:	8200280
Patent Number:	7162212
Patent Number:	8204554
Patent Number:	7319889
Patent Number:	7113811

Property Type	Number
Patent Number:	8483780
Patent Number:	7499722
Patent Number:	8140128
Patent Number:	7039435
Patent Number:	8532594
Patent Number:	8078197
Patent Number:	6894239
Patent Number:	6208846
Patent Number:	6925489
Patent Number:	6584203
Patent Number:	7123727
Patent Number:	7570978
Patent Number:	7782375
Patent Number:	6549792
Patent Number:	6363257
Patent Number:	7280816
Patent Number:	7751541
Patent Number:	7610495
Patent Number:	7404146
Patent Number:	6941156
Patent Number:	6696941
Patent Number:	6118881
Patent Number:	7738583
Patent Number:	7502408
Patent Number:	8184679
Patent Number:	8085871
Patent Number:	7738584
Patent Number:	8416862
Patent Number:	8345732
Patent Number:	8743994
Patent Number:	7894852
Patent Number:	7242961
Patent Number:	7693551
Patent Number:	7813374
Patent Number:	7277417
Patent Number:	8553666
Patent Number:	9025582
Patent Number:	8243701

Property Type	Number
Patent Number:	7317735
Patent Number:	8306142
Patent Number:	7680205
Patent Number:	8233557
Patent Number:	7664200
Patent Number:	7957450
Patent Number:	8437419
Patent Number:	7564914
Patent Number:	8588283
Patent Number:	7693234
Patent Number:	7646703
Patent Number:	7990842
Patent Number:	8477594
Patent Number:	7586887
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Patent Number:	7912024
Patent Number:	8599755
Patent Number:	7515581
Patent Number:	8396072
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Patent Number:	8050237
Patent Number:	7751466
Patent Number:	9236901
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Patent Number:	9374769
Patent Number:	9197175
Patent Number:	7421250
Patent Number:	6980774
Patent Number:	9277499
Patent Number:	8493900
Patent Number:	8218517
Patent Number:	8767700
Patent Number:	7702050
Patent Number:	8300747
Patent Number:	8693559
Patent Number:	9020020
Patent Number:	7680027

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Patent Number:	7684522
Patent Number:	8151158
Patent Number:	8917704
Patent Number:	9118442
Patent Number:	8284819
Patent Number:	8503506
Patent Number:	8681730
Application Number:	13472780
Application Number:	11567086
Application Number:	13292170
Application Number:	60306271
Application Number:	60525231
Application Number:	60673451
Application Number:	60674822
Application Number:	60698686
Application Number:	60730718
Application Number:	60742963
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Application Number:	60695155
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Application Number:	60591097
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Application Number:	60561738
Application Number:	13781869
Application Number:	13418967
Application Number:	60953317
Application Number:	60963010

Property Type	Number
Application Number:	60772320
Application Number:	61494848
Application Number:	60350660
Application Number:	61155482
Application Number:	61611718
Application Number:	60927685
Application Number:	61321402

CORRESPONDENCE DATA

Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone:	5749031499
Email:	jgammon@hilcoglobal.com
Correspondent Name:	JOSHUA GAMMON
Address Line 1:	401 N. MICHIGAN AVE.
Address Line 2:	SUITE 1630
Address Line 4:	CHICAGO, ILLINOIS 60611

NAME OF SUBMITTER:	JOSHUA GAMMON
SIGNATURE:	//Joshua Gammon//
DATE SIGNED:	04/15/2022
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 215

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RELEASE OF PATENT SECURITY INTEREST

This RELEASE OF PATENT SECURITY INTEREST ("**Release**") is made and effective as of April 1, 2022 and granted by CORTLAND CAPITAL MARKET SERVICES LLC (the "**Collateral Agent**"), as collateral agent (in such capacity, together with its successors and permitted assigns) for the secured parties under the Loan Agreement referred to below (the "**Secured Parties**"), in favor of HILCO PATENT ACQUISITION 56, LLC, a Delaware limited liability company, BELL SEMICONDUCTOR, LLC, a Delaware limited liability company and BELL NORTHER RESEARCH, LLC, a Delaware limited liability company (each a "**Grantor**" and collectively the "**Grantors**") and their successors, assigns and legal representatives.

Background

Pursuant to the Term Loan Agreement dated as of January 24, 2018 as amended on November 17, 2020 (the "**Loan Agreement**") among Hilco Patent Acquisition 56, LLC, as borrower, Bell Semiconductor, LLC and Bell Northern Research, LLC, as guarantors, the Collateral Agent and the lenders party thereto, the Grantors executed and delivered to the Collateral Agent (i) that certain Security Agreement by and among the Grantors and the Collateral Agent dated as of January 24, 2018 (the "**Master Security Agreement**") and (ii) that certain Patent Security Agreement by and among the Grantors and the Collateral Agent dated as of January 24, 2018 (the "**Patent Security Agreement**" and, together with the Master Security Agreement, the "**Security Agreements**");

Pursuant to the Security Agreements, each Grantor pledged and granted to the Collateral Agent for the ratable benefit of the Secured Parties a security interest in and to all of the right, title and interest of such Grantor in, to and under the Patent Collateral (as defined below);

The Patent Security Agreement was recorded with the United States Patent and Trademark Office at Reel 045216, Frame 0020 on February 1, 2018; and

The Grantors have requested that the Collateral Agent enter into this Release in order to effectuate, evidence and record the release and reassignment to the Grantors of any and all right, title and interest the Collateral Agent and the Secured Parties may have in the Patent Collateral pursuant to the Security Agreements.

Collateral Agent therefore agrees as follows:

1. Release of Security Interest. Collateral Agent, on behalf of itself and the Secured Parties, their successors, legal representatives and assigns, hereby terminates the Patent Security Agreement and terminates, releases and discharges any and all security interests that it has pursuant to the Security Agreements in any and all right, title and interest of the Grantors, and reassigns to the Grantors any and all right, title and interest that it may have, in, to and under the following (collectively, the "**Patent Collateral**"):

   (a) any and all patents, patent applications and other patent rights and any other governmental authority-issued indicia of invention ownership, including the patents and patent applications listed in Schedule 1 hereto, and all reissues, divisions, continuations, continuations-in-part, renewals, extensions and reexaminations thereof and amendments thereto (the "**Patents**");

(b) all rights of any kind whatsoever of such Grantor accruing under any of the foregoing provided by applicable law of any jurisdiction, by international treaties and conventions and otherwise throughout the world;

(c) any and all license and other agreements in which such Grantor has granted or is granted a license or other right under any Patent;

(d) any and all royalties, fees, income, payments and other proceeds now or hereafter due or payable with respect to any and all of the foregoing; and

(e) any and all claims and causes of action, with respect to any of the foregoing, whether occurring before, on or after the date hereof, including all rights to and claims for damages, restitution and injunctive and other legal and equitable relief for past, present and future infringement, misappropriation, violation, misuse, breach or default, with the right but no obligation to sue for such legal and equitable relief and to collect, or otherwise recover, any such damages.

2. Further Assurances. Collateral Agent agrees to take all further actions, and provide to the Grantors and their successors, assigns and legal representatives all such cooperation and assistance, including, without limitation, the execution and delivery of any and all further documents or other instruments, as the Grantors and their successors, assigns and legal representatives may reasonably request in order to confirm, effectuate or record this Release.

3. Governing Law. This Release and any claim, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Release and the transactions contemplated hereby shall be governed by, and construed in accordance with, the laws of the United States and the State of New York, without giving effect to any choice or conflict of law provision or rule (whether of the State of New York or any other jurisdiction).

[SIGNATURE PAGE FOLLOWS]

Collateral Agent has caused this Release to be duly executed and delivered by its officer duly authorized as of the date stated in the first paragraph above.

CORTLAND CAPITAL MARKET SERVICES LLC,
as Collateral Agent

By: ________________
Name: Emily Ergang Pappas
Title: Head of Legal, North America

ACKNOWLEDGED AND AGREED as of the date stated in the first paragraph above:

HILCO PATENT ACQUISITION 56, LLC, as Grantor

By: ________________
Name: Michael Friedman
Title: CEO

BELL SEMICONDUCTOR, LLC, as Grantor

By: ________________
Name: John Veschi
Title: CEO

BELL NORTHERN RESEARCH, LLC, as Grantor

By: ________________
Name: Afzal Dean
Title: CEO

SCHEDULE 1
TO
RELEASE OF PATENT SECURITY INTEREST

[SEE ATTACHED.]

Schedule B(1)(a) – Semic Processing A

AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08939689	5888120	1997-09-29	1999-03-30	Expired	United States of America	Method and apparatus for chemical mechanical polishing
09216395		1998-12-18		Abandoned	United States of America	Method and Apparatus for Chemical Mechanical Polishing
08700650		1996-08-14		Abandoned	United States of America	Off-Axis Illuminator Lens Mask For Photolithographic Projection System
09105546	5973767	1998-06-26	1999-10-26	Expired	United States of America	Off-axis illuminator lens mask for photolithographic projection system
09089461	6130428	1998-06-02	2000-10-10	Granted	United States of America	Laser fault correction of semiconductor devices
09604865	6407559	2000-06-28	2002-06-18	Granted	United States of America	Laser fault correction of semiconductor devices
08955384	5897381	1997-10-21	1999-04-27	Expired	United States of America	Method of forming a layer and semiconductor substrate
08954791	5893952	1997-10-21	1999-04-13	Expired	United States of America	Apparatus for rapid thermal processing of a wafer
08678718	5756369	1996-07-11	1998-05-26	Expired	United States of America	Rapid thermal processing using a narrowband infrared source and feedback
08924902	5926720	1997-09-08	1999-07-20	Expired	United States of America	Consistent alignment mark profiles on semiconductor wafers using PVD shadowing
09198208	6239499	1998-11-23	2001-05-29	Expired	United States of America	Consistent alignment mark profiles on semiconductor wafers using PVD shadowing
09363084		1999-07-28		Abandoned	United States of America	Nitrogen Implanted Polysilicon Gate For Mosfet Gate Oxide Hardening
08957692	6017808	1997-10-24	2000-01-25	Expired	United States of America	Nitrogen implanted polysilicon gate for MOSFET gate oxide hardening
09022588	6117795	1998-02-12	2000-09-12	Granted	United States of America	Use of corrosion inhibiting compounds in post-etch cleaning processes of an integrated circuit
09583297		2000-05-30		Abandoned	United States of America	Use Of Corrosion Inhibiting Compounds In Post-Etch Cleaning Processes Of An Integrated Circuit
09081403	6239491	1998-05-18	2001-05-29	Granted	United States of America	Integrated circuit structure with thin dielectric between at least local interconnect level and first metal interconnect level, and process for making same
09790821	6486056	2001-02-22	2002-11-26	Granted	United States of America	Process for making integrated circuit structure with thin dielectric between at least local interconnect level and first metal interconnect level
08374193	5646073	1995-01-18	1997-07-08	Expired	United States of America	Process for selective deposition of polysilicon over single crystal silicon substrate and resulting product
08823829	5818100	1997-03-25	1998-10-06	Expired	United States of America	Product resulting from selective deposition of polysilicon over single crystal silicon substrate
08566161		1995-11-30		Abandoned	United States of America	Product Resulting From Selective Deposition Of Polysilicon Over Single Crystal Silicon Substrate
08879100	6121159	1997-06-19	2000-09-19	Expired	United States of America	Polymeric dielectric layers having low dielectric constants and improved adhesion to metal lines

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09618211	6455934	2000-07-10	2002-09-24	Expired	United States of America	Polymeric dielectric layers having low dielectric constants and improved adhesion to metal lines
09362648	6273798	1999-07-27	2001-08-14	Expired	United States of America	Pre-conditioning polishing pads for chemical-mechanical polishing
08841947	5990010	1997-04-08	1999-11-23	Expired	United States of America	Pre-conditioning polishing pads for chemical-mechanical polishing
08791244	6117736	1997-01-30	2000-09-12	Expired	United States of America	Method of fabricating insulated-gate field-effect transistors having different gate capacitances
09594478	6300663	2000-06-15	2001-10-09	Expired	United States of America	Insulated-gate field-effect transistors having different gate capacitances
08701476	5905381	1996-08-22	1999-05-18	Expired	United States of America	Functional OBIC analysis
09244327	6154039	1999-02-03	2000-11-28	Expired	United States of America	Functional OBIC analysis
09109331	6071818	1998-06-30	2000-06-06	Granted	United States of America	Endpoint detection method and apparatus which utilize an endpoint polishing layer of catalyst material
09534652	6258205	2000-03-24	2001-07-10	Granted	United States of America	Endpoint detection method and apparatus which utilize an endpoint polishing layer of catalyst material
08684022	5728612	1996-07-19	1998-03-17	Expired	United States of America	Method for forming minimum area structures for sub-micron CMOS ESD protection in integrated circuit structures without extra implant and mask steps, and articles formed thereby
08748372	5843813	1996-11-13	1998-12-01	Expired	United States of America	I/O driver design for simultaneous switching noise minimization and ESD performance enhancement
08936829	5970321	1997-09-25	1999-10-19	Expired	United States of America	Method of fabricating a microelectronic package having polymer ESD protection
08595021	5869869	1996-01-31	1999-02-09	Expired	United States of America	Microelectronic device with thin film electrostatic discharge protection structure
08723140	5955762	1996-10-01	1999-09-21	Expired	United States of America	Microelectronic package with polymer ESD protection
09188929		1998-11-09		Abandoned	United States of America	Formation Of Gradient Doped Profile Region Between Channel Region And Heavily Doped Source/Drain Contact Region Of MOS Device In Integrated Circuit Structure Using A Re-Entrant Gate Electrode And A Higher Dose Drain Implantation
08690592	5877530	1996-07-31	1999-03-02	Expired	United States of America	Formation of gradient doped profile region between channel region and heavily doped source/drain contact region of MOS device in integrated circuit structure using a re-entrant gate electrode and a higher dose drain implantation
08552461	5670425	1995-11-09	1997-09-23	Expired	United States of America	Process for making integrated circuit structure comprising local area interconnects formed over semiconductor substrate by selective deposition on seed layer in patterned trench
08873809	5895261	1997-06-12	1999-04-20	Expired	United States of America	Process for making integrated circuit structure comprising local area interconnects formed over semiconductor substrate by selective deposition on seed layer in patterned trench

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08718852	5827777	1996-09-24	1998-10-27	Expired	United States of America	Method of making a barrier metal technology for tungsten plug interconnection
08378027	5600182	1995-01-24	1997-02-04	Expired	United States of America	Barrier metal technology for tungsten plug interconnection
08902507		1997-07-29		Abandoned	United States of America	Use Of Reticle Stitching To Provide Design Flexibility
08357728	5652163	1994-12-13	1997-07-29	Expired	United States of America	Use of reticle stitching to provide design flexibility
08233607	5593918	1994-04-22	1997-01-14	Expired	United States of America	Techniques for forming superconductive lines
08454542	5644143	1995-05-30	1997-07-01	Expired	United States of America	Method for protecting a semiconductor device with a superconductive line
11286558	7847285	2005-11-23	2010-12-07	Granted	United States of America	CONFIGURABLE POWER SEGMENTATION USING A NANOTUBE STRUCTURE
12912791	8017512	2010-10-27	2011-09-13	Granted	United States of America	EFFICIENT POWER MANAGEMENT METHOD IN INTEGRATED CIRCUIT THROUGH A NANOTUBE STRUCTURE
10418375	6982229	2003-04-18	2006-01-03	Lapsed	United States of America	Ion recoil implantation and enhanced carrier mobility in CMOS device
11098290	7129516	2005-04-04	2006-10-31	Lapsed	United States of America	Ion recoil implantation and enhanced carrier mobility in CMOS device
11063384	7201633	2005-02-22	2007-04-10	Granted	United States of America	Systems and methods for wafer polishing
11158450		2005-06-21		Abandoned	United States of America	Systems and Methods For Wafer Polishing
11381409		2006-05-03		Abandoned	United States of America	Adjustable Transmission Phase Shift Mask
10972898	7067223	2004-10-25	2006-06-27	Lapsed	United States of America	Adjustable transmission phase shift mask
10039508	6841308	2001-11-09	2005-01-11	Lapsed	United States of America	Adjustable transmission phase shift mask
11016468	6998716	2004-12-16	2006-02-14	Granted	United States of America	Diamond metal-filled patterns achieving low parasitic coupling capacitance
10327283	6867127	2002-12-19	2005-03-15	Granted	United States of America	Diamond metal-filled patterns achieving low parasitic coupling capacitance
60578890		2004-06-10		Abandoned	United States of America	Vortex Phase Shift Mask Applied to Optical Direct Write
13722648	9188848	2012-12-20	2015-11-17	Lapsed	United States of America	Maskless Vortex Phase Shift Optical Direct Write Lithography
13253554	8377633	2011-10-05	2013-02-19	Lapsed	United States of America	Maskless Vortex Phase Shift Optical Direct Write Lithography
11011896	8057963	2004-12-14	2011-11-15	Lapsed	United States of America	Maskless Vortex Phase Shift Optical Direct Write Lithography
11000772	7095483	2004-12-01	2006-08-22	Lapsed	United States of America	Process independent alignment marks
09887131	6856029	2001-06-22	2005-02-15	Granted	United States of America	Process independent alignment marks
10750348	6969683	2003-12-31	2005-11-29	Granted	United States of America	Method of preventing resist poisoning in dual damascene structures
10025304	6713386	2001-12-19	2004-03-30	Granted	United States of America	Method of preventing resist poisoning in dual damascene structures
10195775	6673200	2002-07-12	2004-01-06	Granted	United States of America	Method of reducing process plasma damage using optical spectroscopy
60384499		1900-01-01		Abandoned	United States of America	Impact of F Species on Plasma Charge Damage in a RF Aher

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10680503	6972840	2003-10-06	2005-12-06	Lapsed	United States of America	Method of reducing process plasma damage using optical spectroscopy
10762788	7151059	2004-01-22	2006-12-19	Granted	United States of America	MOS Transistor And Method Of Manufacture
09597012	6740912	2000-06-20	2004-05-25	Granted	United States of America	Semiconductor Device Free Of LDD Regions
10291356		2002-11-08		Abandoned	United States of America	High-K Dielectric Gate Material Uniquely Formed
10643687	6919263	2003-08-19	2005-07-19	Lapsed	United States of America	High-K dielectric gate material uniquely formed
09408299	6323044	1999-09-29	2001-11-27	Granted	United States of America	Integrated Circuit Capacitor And Associated Fabrication Methods
09951178	6525358	2001-09-13	2003-02-25	Granted	United States of America	Capacitor Having The Lower Electrode For Preventing Undesired Defects At The Surface Of The Metal Plug
10459072	6806162	2003-06-11	2004-10-19	Lapsed	United States of America	Method for composing a dielectric layer within an interconnect structure of a multilayer semiconductor device
09164069	6614097	1998-09-30	2003-09-02	Lapsed	United States of America	Method for composing a dielectric layer within an interconnect structure of a multilayer semiconductor device
12256677		2008-10-23		Abandoned	United States of America	Method To Reduce Boron Penetration In SiGe Bipolar Device
11694021	7456061	2007-03-30	2008-11-25	Granted	United States of America	Method To Reduce Boron Penetration In SiGe Bipolar Device
09886780	6649422	2001-06-21	2003-11-18	Granted	United States of America	Integrated Circuit Having A Micromagnetic Device And Method Of Manufacture Therefor
09338143	6255714	1999-06-22	2001-07-03	Granted	United States of America	An Integrated Circuit Having A Micromagnetic Device And Method Of Manufacture Therefor
10234354	7126198	2002-09-03	2006-10-24	Lapsed	United States of America	Protruding Spacers For Self-Aligned Contacts
11542864	7332775	2006-10-04	2008-02-19	Granted	United States of America	Protruding Spacers For Self-Aligned Contacts
09156719	6495407	1998-09-18	2002-12-17	Granted	United States of America	Method Of Making An Article Comprising An Oxide Layer On A GaAs-Based Semiconductor Body
09093557	5962883	1998-06-08	1999-10-05	Expired	United States of America	Article Comprising An Oxide Layer On A GaAs-Based Semiconductor Body, And Method Of Making The Article
11811519	7384801	2007-06-11	2008-06-10	Granted	United States of America	Integrated circuit with inductor having horizontal magnetic flux lines
10614307	7253497	2003-07-02	2007-08-07	Granted	United States of America	Integrated circuit with inductor having horizontal magnetic flux lines
09085913	5949112	1998-05-28	1999-09-07	Granted	United States of America	Integrated Circuits with Tub-Ties
09339306	6054342	1999-06-23	2000-04-25	Granted	United States of America	Method Of Making Integrated Circuits With Tub-Ties
08562235	5773338	1995-11-21	1998-06-30	Expired	United States of America	Bipolar Transistor With MOS-Controlled Protection For Reverse-Biased Emitter-Base Junction
09050711	5949128	1998-03-30	1999-09-07	Expired	United States of America	Bipolar Transistor With MOS\(miControlled Protection For Reverse\(miBiased Emitter\(miBase Junction
08347527	6445043	1994-11-30	2002-09-03	Granted	United States of America	Process for Forming Isolation Regions in An Integrated Circuit and Structure Formed Thereby
08620964	5763314	1996-03-22	1998-06-09	Expired	United States of America	Process For Forming Isolation Regions In An Integrated Circuit

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08777008	5830619	1997-01-07	1998-11-03	Expired	United States of America	Resist Materials
08079310	6159665	1993-06-17	2000-12-12	Granted	United States of America	Processes Using Photosensitive Materials Including A Nitro Benzyl Ester Photoacid Generator
10442533	6864152	2003-05-20	2005-03-08	Granted	United States of America	Fabrication of trenches with multiple depths on the same substrate
10931605	7189628	2004-08-31	2007-03-13	Granted	United States of America	Fabrication of trenches with multiple depths on the same substrate
09943403	6521520	2001-08-30	2003-02-18	Granted	United States of America	Semiconductor wafer arrangement and method of processing a semiconductor wafer
10321250	6707114	2002-12-16	2004-03-16	Granted	United States of America	Semiconductor wafer arrangement of a semiconductor wafer
09162407	6211555	1998-09-29	2001-04-03	Granted	United States of America	Semiconductor device with a pair of transistors having dual work function gate electrodes
09591108	6514824	2000-06-09	2003-02-04	Granted	United States of America	Semiconductor device with a pair of transistors having dual work function gate electrodes
09654689	6613651	2000-09-05	2003-09-02	Lapsed	United States of America	Integrated circuit isolation system
10383031	6831348	2003-03-06	2004-12-14	Lapsed	United States of America	Integrated circuit isolation system
10942444	7381502	2004-09-16	2008-06-03	Lapsed	United States of America	Apparatus and method to improve the resolution of photolithography systems by improving the temperature stability of the reticle
10265856	6866970	2002-10-07	2005-03-15	Lapsed	United States of America	Apparatus and method to improve the resolution of photolithography systems by improving the temperature stability of the reticle
10702165	6830943	2003-11-04	2004-12-14	Lapsed	United States of America	Thin film CMOS calibration standard having protective cover layer
10194578	6674092	2002-07-12	2004-01-06	Lapsed	United States of America	Thin film CMOS calibration standard having protective cover layer
10164909	6555475	2002-06-07	2003-04-29	Granted	United States of America	Arrangement and method for polishing a surface of a semiconductor wafer
09750639	6439981	2000-12-28	2002-08-27	Granted	United States of America	Arrangement and method for polishing a surface of a semiconductor wafer
10607353	6831022	2003-06-26	2004-12-14	Lapsed	United States of America	Method and apparatus for removing water vapor as a byproduct of chemical reaction in a wafer processing chamber
10140536	6630411	2002-05-07	2003-10-07	Granted	United States of America	Method and apparatus for removing water vapor as a byproduct of chemical reaction in a wafer processing chamber
09960765	6504219	2001-09-21	2003-01-07	Granted	United States of America	Indium field implant for punchthrough protection in semiconductor devices
09469579	6342429	1999-12-22	2002-01-29	Granted	United States of America	Method of fabricating an indium field implant for punchthrough protection in semiconductor devices
10819253	7242056	2004-04-05	2007-07-10	Granted	United States of America	Structure And Fabrication Method For Capacitors Integratible With Vertical Replacement Gate Transistors
11809686	7633118	2007-05-31	2009-12-15	Lapsed	United States of America	Structure And Fabrication Method For Capacitors Integratible With Vertical Replacement Gate Transistors

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12319603	7700432	2009-01-09	2010-04-20	Lapsed	United States of America	Method of Fabricating a Vertical Transistor and Capacitor
11809873	7491610	2007-06-01	2009-02-17	Granted	United States of America	Fabrication Method
09956381		2001-09-18		Abandoned	United States of America	An Integratible Vertical Replacement Gate (VRG)-type Poly-Nitride-Poly (PNP) Or Metal-Nitride-poly (MNP) Capacitor
12610733	7911006	2009-11-02	2011-03-22	Granted	United States of America	Structure And Fabrication Method For Capacitors Integratible With Vertical Replacement Gate Transistors
09723557	6455418	2000-11-28	2002-09-24	Granted	United States of America	Barrier For Copper Metallization
09218649	6288449	1998-12-22	2001-09-11	Granted	United States of America	Barrier For Copper Metallization
09244857	6068130	1999-02-05	2000-05-30	Granted	United States of America	Device And Method For Protecting Electronic Component
09580522	6554137	2000-05-30	2003-04-29	Granted	United States of America	Device And Method For Protecting Electronic Component
10649140	6821851	2003-08-27	2004-11-23	Granted	United States of America	Method Of Making Ultra Thin Body Vertical Replacement Gate Mosfet
10164202	6635924	2002-06-06	2003-10-21	Granted	United States of America	Ultra Thin Body Vertical Replacement Gate Mosfet
10028594	6624498	2001-12-20	2003-09-23	Granted	United States of America	Micromagnetic Device Having Alloy Of Combalt, Phosphorus and Iron
09552627	6495019	2000-04-19	2002-12-17	Granted	United States of America	Device Comprising Micromagnetic Components For Power Applications And Process For Forming Device
09934283	6926841	2001-08-21	2005-08-09	Lapsed	United States of America	Stepped Etalon
09312386	6500521	1999-05-14	2002-12-31	Granted	United States of America	Stepped Etalon
10306565		2002-11-27		Abandoned	United States of America	A Process For Fabricating A Semiconductor Device Having A GATE Dielectric Layer With A High Dielectric Constant
10876183	7223677	2004-06-24	2007-05-29	Granted	United States of America	Process For Fabricating A Semiconductor Device Having An Insulating Layer Formed Over A Semiconductor Substrate
10814682		2004-03-31		Abandoned	United States of America	Semiconductor Device Having A Doped Lattice Matching Layer And A Method Of Manufacture Therefor
10003873	6737339	2001-10-24	2004-05-18	Granted	United States of America	Semiconductor Device Having A Doped Lattice Matching Layer And A Method Of Manufacture Therefor
10814680	6855991	2004-03-31	2005-02-15	Granted	United States of America	Semiconductor Device Having A Doped Lattice Matching Layer And A Method Of Manufacture Therefor
09605931		2000-06-28		Abandoned	United States of America	A Novel Gate Dielectric Structure For Reducing Boron Penetration And Current Leakage
10847789	7081419	2004-05-18	2006-07-25	Lapsed	United States of America	Gate Dielectric Structure For Reducing Boron Penetration And Current Leakage
09146418	6246095	1998-09-03	2001-06-12	Expired	United States of America	System And Method For Forming A Thin Gate Oxide Layer
08814670	5940736	1997-03-11	1999-08-17	Expired	United States of America	Method For Forming A High Quality Ultrathin Gate Oxide Layer
09086252	6060406	1998-05-28	2000-05-09	Granted	United States of America	MOS Transistors With Improved Gate Dielectrics
09519909	6590241	2000-03-07	2003-07-08	Lapsed	United States of America	MOS Transistors With Improved Gate Dielectrics
11821396	7800226	2007-06-22	2010-09-21	Lapsed	United States of America	Integrated Circuit With Metal Silicide Regions

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10245447	7250356	2002-09-17	2007-07-31	Granted	United States of America	Method For Forming Metal Silicide Regions In An Integrated Circuit
11827807	7632690	2007-07-13	2009-12-15	Lapsed	United States of America	Real-Time Gate Etch Critical Dimension Control By Oxygen Monitoring
10675572	7261745	2003-09-30	2007-08-28	Granted	United States of America	Real-Time Gate Etch Critical Dimension Control By Oxygen Monitoring
10978716	7642188	2004-11-01	2010-01-05	Lapsed	United States of America	Mixed Signal Integrated Circuit With Improved Isolation
09911035	6909150	2001-07-23	2005-06-21	Granted	United States of America	Mixed Signal Integrated Circuit With Improved Isolation
08150261	5467883	1993-11-27	1995-11-21	Expired	United States of America	Active Neural Network Control Of Wafer Attributes In A Plasma Etch Process
08468167	5737496	1995-06-06	1998-04-07	Expired	United States of America	Active Neural Network Control Of Wafer Attributes In A Plasma Etch Process
08446122	5653894	1995-05-19	1997-08-05	Expired	United States of America	Active Neural Network Determination Of Endpoint In A Plasma Etch Process
08848141	6054722	1997-04-28	2000-04-25	Expired	United States of America	Current Drive of TFTs in High\(miSpeed SRAMs
08572196	5625200	1995-12-14	1997-04-29	Expired	United States of America	Complementary Devices Using Thin Film Transistors With Improved Current Drive
11385156	7282461	2006-03-21	2007-10-16	Granted	United States of America	Phase-Shifting Mask And Semiconductor Device
10655050	7053405	2003-09-04	2006-05-30	Lapsed	United States of America	Phase-Shifting Mask And Semiconductor Device
09488662	6638663	2000-01-20	2003-10-28	Granted	United States of America	Phase-Shifting Mask And Semiconductor Device
09335707	6197641	1999-06-18	2001-03-06	Granted	United States of America	Process For Fabricating Vertical Transistors
09143274	6027975	1998-08-28	2000-02-22	Granted	United States of America	Process For Fabricating Vertical Transistors
10226930	6869815	2002-08-22	2005-03-22	Granted	United States of America	Electro-Mechanical Device Having A Charge Dissipation Layer And Method Of Manufacture Therefor
10967900	7015056	2004-10-18	2006-03-21	Lapsed	United States of America	Electro-Mechanical Device Having A Charge Dissipation Layer And A Method Of Manufacture Therefor
08753859	5976623	1996-12-03	1999-11-02	Expired	United States of America	Process For Making Composite Films
09197833	6110543	1998-11-23	2000-08-29	Expired	United States of America	Process For Making Compound Films
09568265	6380083	2000-05-10	2002-04-30	Granted	United States of America	Process For Semiconductor Device Fabrication Having Copper Interconnects
09143037	6297154	1998-08-28	2001-10-02	Granted	United States of America	Process For Semiconductor Device Fabrication Having Copper Interconnects
09083168	5998099	1998-05-22	1999-12-07	Expired	United States of America	Energy-Sensitive Resist Material And A Process For Device Fabrication UsingAn Energy-Sensitive Resist Material
08813732	5879857	1997-03-07	1999-03-09	Expired	United States of America	Energy-Sensitive Resist Material And A Process For Device Fabrication Using An Energy-Sensitive Resist Material
08803703	5843624	1997-02-21	1998-12-01	Expired	United States of America	Energy-Sensitive Resist Material And A Process For Device Fabrication Using An Energy-Sensitive Resist Material

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09045062	6103615	1998-03-19	2000-08-15	Granted	United States of America	Corrosion sensitivity structures for vias and contact holes in integrated circuits
09464225	6278129	1999-12-15	2001-08-21	Granted	United States of America	Corrosion sensitivity structures for vias and contact holes in integrated circuits
09370501	6525377	1999-08-09	2003-02-25	Granted	United States of America	Low threshold voltage MOS transistor and method of manufacture
09107767	5985705	1998-06-30	1999-11-16	Granted	United States of America	Low threshold voltage MOS transistor and method of manufacture
09027307	6004880	1998-02-20	1999-12-21	Granted	United States of America	Method of single step damascene process for deposition and global planarization
09365440	6090239	1999-08-02	2000-07-18	Granted	United States of America	Method of single step damascene process for deposition and global planarization
09052851	6057571	1998-03-31	2000-05-02	Granted	United States of America	High aspect ratio, metal-to-metal, linear capacitor for an integrated circuit
09221023	6251740	1998-12-23	2001-06-26	Granted	United States of America	Method of forming and electrically connecting a vertical interdigitated metal-insulator-metal capacitor extending between interconnect layers in an integrated circuit
09219655	6417535	1998-12-23	2002-07-09	Granted	United States of America	Vertical interdigitated metal-insulator-metal capacitor for an integrated circuit
09052793	6358837	1998-03-31	2002-03-19	Granted	United States of America	Method of electrically connecting and isolating components with vertical elements extending between interconnect layers in an integrated circuit
09525489	6441419	2000-03-15	2002-08-27	Granted	United States of America	Encapsulated-metal vertical-interdigitated capacitor and damascene method of manufacturing same
09517150	6479857	2000-03-02	2002-11-12	Lapsed	United States of America	Capacitor having a tantalum lower electrode and method of forming the same
10228859	6861310	2002-08-27	2005-03-01	Lapsed	United States of America	Capacitor having a tantalum lower electrode and method of forming the same
09952343	6620729	2001-09-14	2003-09-16	Lapsed	United States of America	Ion beam dual damascene process
10400281		2003-03-27		Abandoned	United States of America	Ion Beam Double Damascene Process
09211024	6168502	1998-12-14	2001-01-02	Expired	United States of America	Subsonic to supersonic and ultrasonic conditioning of a polishing pad in a chemical mechanical polishing apparatus
08696445	5868608	1996-08-13	1999-02-09	Expired	United States of America	Subsonic to supersonic and ultrasonic conditioning of a polishing pad in a chemical mechanical polishing apparatus
60097750		1998-08-24		Expired	United States of America	Off-Axis Pupil Aperture And Method For Making The Same
09358606	6426131	1999-07-21	2002-07-30	Granted	United States of America	Off-axis pupil aperture and method for making the same
09844531	6596579	2001-04-27	2003-07-22	Granted	United States of America	Method of forming analog capacitor dual damascene process
10959868	7176082	2004-10-06	2007-02-13	Granted	United States of America	Analog capacitor in dual damascene process
10409499	6822282	2003-04-08	2004-11-23	Granted	United States of America	Analog capacitor in dual damascene process
08578741		1995-12-26		Abandoned	United States of America	Integrated Circuit With On-Chip Ground Plane

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08867286	5892272	1997-06-02	1999-04-06	Expired	United States of America	Integrated circuit with on-chip ground base
08277344	5482897	1994-07-19	1996-01-09	Expired	United States of America	Integrated circuit with on-chip ground plane
08943371	5898228	1997-10-03	1999-04-27	Expired	United States of America	On-chip misalignment indication
09150076	6221681	1998-09-09	2001-04-24	Expired	United States of America	On-chip misalignment indication
08811818	5789028	1997-03-04	1998-08-04	Expired	United States of America	Method for eliminating peeling at end of semiconductor substrate in metal organic chemical vapor deposition of titanium nitride
09084027		1998-05-22		Abandoned	United States of America	Method And Apparatus For Eliminating Peeling At End Edge Of Semiconductor Substrate In Metal Organic Chemical Vapor Deposition Of Titanium Nitrite
09158408		1998-09-22		Abandoned	United States of America	Deep Sub-Micron CMOS Device Exhibiting Artificially-Induced Reverse Short-Channel Effects
08761761	5874329	1996-12-05	1999-02-23	Expired	United States of America	Method for artificially-inducing reverse short-channel effects in deep sub-micron CMOS devices
08926220	6030460	1997-09-09	2000-02-29	Expired	United States of America	Method and apparatus for forming dielectric films
08653264	5710079	1996-05-24	1998-01-20	Expired	United States of America	Method and apparatus for forming dielectric films
10944995		2004-09-20		Abandoned	United States of America	Psuedo Low Volume Reticle (PLVR) Design for ASIC Manufacturing
12204290	7763414	2008-09-04	2010-07-27	Lapsed	United States of America	Psuedo Low Volume Reticle (PLVR) Design for ASIC Manufacturing
12191171	7646077	2008-08-13	2010-01-12	Granted	United States of America	Dielectric Barrier Films For Use As Copper Barrier Layers In Semiconductor Trench And Via Structures
10321938	6939800	2002-12-16	2005-09-06	Lapsed	United States of America	Dielectric barrier films for use as copper barrier layers in semiconductor trench and via structures
11131003	7427563	2005-05-16	2008-09-23	Granted	United States of America	Dielectric barrier films for use as copper barrier layers in semiconductor trench and via structures
10991107	7396760	2004-11-17	2008-07-08	Granted	United States of America	Method and system for reducing inter-layer capacitance in integrated circuits
12156281	8015540	2008-05-30	2011-09-06	Granted	United States of America	Method and System for Reducing Inter-Layer Capacitance in Integrated Circuits
10697506	7323228	2003-10-29	2008-01-29	Granted	United States of America	Method of vaporizing and ionizing metals for use in semiconductor processing
11939482	7670645	2007-11-13	2010-03-02	Lapsed	United States of America	Method of Treating Metal and Metal Salts to Enable Thin Layer Deposition in Semiconductor Processing
08502566	5543643	1995-07-13	1996-08-06	Expired	United States of America	Combined JFET and MOS transistor device, circuit
08612337	5631176	1996-03-06	1997-05-20	Expired	United States of America	Method of making combined JFET & MOS transistor device
11286546	7494842	2005-11-23	2009-02-24	Granted	United States of America	PROGRAMMABLE NANOTUBE INTERCONNECT
12354768	8415714	2009-01-15	2013-04-09	Granted	United States of America	PROGRAMMABLE NANOTUBE INTERCONNECT
11389643	7312127	2006-03-23	2007-12-25	Granted	United States of America	Incorporating dopants to enhance the dielectric properties of metal silicates

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10738761	7064062	2003-12-16	2006-06-20	Lapsed	United States of America	Incorporating dopants to enhance the dielectric properties of metal silicates
11768725	7492049	2007-06-26	2009-02-17	Lapsed	United States of America	Multi-layer Registration and Dimensional Test Mark for Scatterometrical Measurement
11046150	7258953	2005-01-28	2007-08-21	Lapsed	United States of America	Multi-layer registration and dimensional test mark for scatterometrical measurement
10035704	6727177	2001-10-18	2004-04-27	Granted	United States of America	Multi-step process for forming a barrier film for use in copper layer formation
11733673	7413984	2007-04-10	2008-08-19	Granted	United States of America	Multi-step process for forming a barrier film for use in copper layer formation
10772133	7229923	2004-02-03	2007-06-12	Granted	United States of America	Multi-step process for forming a barrier film for use in copper layer formation
08604867	5688709	1996-02-14	1997-11-18	Expired	United States of America	Method for forming composite trench-fin capacitors for DRAMS
08879341	6081008	1997-06-20	2000-06-27	Expired	United States of America	Composite trench-fin capacitors for DRAM
08438614		1995-05-10		Abandoned	United States of America	Microelectronic Integrated Circuit Including Triangular Semiconductor "Nand" Gate Device
08561107	5650653	1995-11-21	1997-07-22	Expired	United States of America	Microelectronic integrated circuit including triangular CMOS nand gate device
08704472	5763302	1996-08-20	1998-06-09	Expired	United States of America	Self-aligned twin well process
08768845	5770492	1996-12-18	1998-06-23	Expired	United States of America	Self-aligned twin well process
08488075	5583062	1995-06-07	1996-12-10	Expired	United States of America	Self-aligned twin well process having a SiO2-polysilicon-SiO2 barrier mask
08521795	5585286	1995-08-31	1996-12-17	Expired	United States of America	Implantation of a semiconductor substrate with controlled amount of noble gas ions to reduce channeling and/or diffusion of a boron dopant subsequently implanted into the substrate to form P-LDD region of a PMOS device
08677078	5717238	1996-07-09	1998-02-10	Expired	United States of America	Substrate with controlled amount of noble gas ions to reduce channeling and/or diffusion of a boron dopant forming P-LDD region of a PMOS device
08374195	5598021	1995-01-18	1997-01-28	Expired	United States of America	MOS structure with hot carrier reduction
08695569	5663083	1996-08-12	1997-09-02	Expired	United States of America	Process for making improved MOS structure with hot carrier reduction
08939350	5858864	1997-09-29	1999-01-12	Expired	United States of America	Process for making group IV semiconductor substrate treated with one or more group IV elements to form barrier region capable of inhibiting migration of dopant materials in substrate

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08306179		1994-09-13		Abandoned	United States of America	Group Iv Semiconductor Substrate Treated With One Or More Group Iv Elements To Form Barrier Region Capable Of Inhibiting Migration Of Dopant Materials In Substrate And Process For Making Same
08434673	5654210	1995-05-04	1997-08-05	Expired	United States of America	Process for making group IV semiconductor substrate treated with one or more group IV elements to form one or more barrier regions capable of inhibiting migration of dopant materials in substrate
10791337		2004-03-01		Abandoned	United States of America	Spacer-Less Transistor Integration Scheme For High-K Gate Dielectrics And Small Gate-To-Gate Spaces Applicable To SI, SiGe And Strained Silicon Schemes
11960554	7955919	2007-12-19	2011-06-07	Granted	United States of America	Spacer-Less Transistor Integration Scheme For High-K Gate Dielectrics And Small Gate-To-Gate Spaces Applicable To Si, SiGe And Strained Silicon Schemes
07754201		1991-08-19		Abandoned	United States of America	Bicmos Compacted Logic Array
08410375	6081004	1995-03-27	2000-06-27	Expired	United States of America	BiCMOS compacted logic array
07523445		1990-05-14		Abandoned	United States of America	Bicmos Compacted Logic Array
08014084		1993-02-04		Abandoned	United States of America	Bicmos Compacted Logic Array
12574426	8021955	2009-10-06	2011-09-20	Granted	United States of America	Method Characterizing Materials For A Trench Isolation Structure Having Low Trench Parasitic Capacitance
11262173	7619294	2005-10-28	2009-11-17	Lapsed	United States of America	Shallow Trench Isolation Structure With Low Trench Parasitic Capacitance
09991202	7001823	2001-11-14	2006-02-21	Lapsed	United States of America	Method of manufacturing a shallow trench isolation structure with low trench parasitic capacitance
60314148		1900-01-01		Abandoned	United States of America	Process Enhancement to Prevent LI or Borderless Contact To Well Leakage
10360746	6893937	2003-02-05	2005-05-17	Granted	United States of America	Method for preventing borderless contact to well leakage
11104050	7098515	2005-04-11	2006-08-29	Lapsed	United States of America	Semiconductor chip with borderless contact that avoids well leakage
10006540	6551901	2001-11-30	2003-04-22	Granted	United States of America	Method for preventing borderless contact to well leakage
11090107	7312532	2005-03-24	2007-12-25	Granted	United States of America	Dual damascene interconnect structure with improved electro migration lifetimes
10328333	7033929	2002-12-23	2006-04-25	Lapsed	United States of America	Dual damascene interconnect structure with improved electro migration lifetimes
07982093		1992-11-24		Abandoned	United States of America	Improved Metal Oxide Semiconductors Devices And Method For Making Same
08259575	6432759	1994-06-14	2002-08-13	Granted	United States of America	Method of forming source and drain regions for CMOS devices
11258253	7582938	2005-10-25	2009-09-01	Lapsed	United States of America	I/O and Power ESD Protection Circuits by Enhancing Substrate-Bias In Deep-Submicron CMOS Process

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12506746	7948036	2009-07-21	2011-05-24	Granted	United States of America	I/O and Power ESD Protection Circuits by Enhancing Substrate-Bias In Deep-Submicron CMOS Process
13110581	8269280	2011-05-18	2012-09-18	Granted	United States of America	I/O and Power ESD Protection Circuits by Enhancing Substrate-Bias In Deep-Submicron CMOS Process
10676602	6979869	2003-10-01	2005-12-27	Granted	United States of America	Substrate-biased I/O and power ESD protection circuits in deep-submicron twin-well process
11838546	8134188	2007-08-14	2012-03-13	Granted	United States of America	Circuits And Methods For Improved FET Matching
13368985	8440512	2012-02-08	2013-05-14	Granted	United States of America	Circuits and Methods for Improved FET Matching
07591646	5123375	1990-10-02	1992-06-23	Expired	United States of America	Structure for filtering CVD chamber process gases
08979733	6113699	1997-11-26	2000-09-05	Expired	United States of America	Purging gas control structure for CVD chamber
08390329	5681613	1995-02-17	1997-10-28	Expired	United States of America	Filtering technique for CVD chamber process gases
07591587		1990-10-02		Abandoned	United States of America	Method For Performing In-Situ Etch Of A Cvd Chamber
07794780	5203956	1991-11-18	1993-04-20	Expired	United States of America	Method for performing in-situ etch of a CVD chamber
07591655		1990-10-02		Abandoned	United States of America	Apparatus For Performing In-Situ Etch Of Of A Cvd Chamber
07809104	5211796	1991-12-12	1993-05-18	Expired	United States of America	Apparatus for performing in-situ etch of CVD chamber
08979734		1997-11-26		Abandoned	United States of America	In-Situ Etch Of Cvd Chamber
07739773	5391394	1991-07-29	1995-02-21	Expired	United States of America	Tungsten deposition process for low contact resistivity to silicon
08851846	5853804	1997-05-06	1998-12-29	Expired	United States of America	Gas control technique for limiting surging of gas into a CVD chamber
07461959		1990-01-08		Abandoned	United States of America	Tungsten Deposition Process For Low Contact Resistivity To Silicon
07592014	5180432	1990-10-02	1993-01-19	Expired	United States of America	Apparatus for conducting a refractory metal deposition process
11937199	7560292	2007-11-08	2009-07-14	Lapsed	United States of America	Voltage Contrast Monitor for Integrated Circuit Defects
10652369	6936920	2003-08-29	2005-08-30	Lapsed	United States of America	Voltage contrast monitor for integrated circuit defects
11131705	7323768	2005-05-18	2008-01-29	Lapsed	United States of America	Voltage contrast monitor for integrated circuit defects
12890336	8527912	2010-09-24	2013-09-03	Lapsed	United States of America	Digitally Obtaining Contours of Fabricated Polygons
11182615	7827509	2005-07-15	2010-11-02	Granted	United States of America	Digitally Obtaining Contours of Fabricated Polygons
12652560	8106480	2010-01-05	2012-01-31	Granted	United States of America	Bipolar Device Having Improved Capacitance
11531477	7666750	2006-09-13	2010-02-23	Lapsed	United States of America	Bipolar Device Having Improved Capacitance
12018849	7582566	2008-01-24	2009-09-01	Lapsed	United States of America	Method and Apparatus For Redirecting Void Diffusion Away From Vias In An Integrated Circuit Design
11323400	7361965	2005-12-29	2008-04-22	Granted	United States of America	Method and apparatus for redirecting void diffusion away from vias in an integrated circuit design
10383149	6872612	2003-03-06	2005-03-29	Lapsed	United States of America	Local interconnect for integrated circuit
11058498	7081379	2005-02-15	2006-07-25	Lapsed	United States of America	Local interconnect for integrated circuit
10801310	7395522	2004-03-16	2008-07-01	Granted	United States of America	Yield profile manipulator
12117379	7930655	2008-05-08	2011-04-19	Granted	United States of America	Yield Profile Manipulator
11414902	7541238	2006-05-01	2009-06-02	Granted	United States of America	Inductor Formed In An Integrated Circuit
10953475	7068139	2004-09-29	2006-06-27	Granted	United States of America	Inductor Formed In An Integrated Circuit

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12340813	7678639	2008-12-22	2010-03-16	Granted	United States of America	Inductor Formed In An Integrated Circuit
11265062	7635888	2005-11-02	2009-12-22	Granted	United States of America	Interdigitated Capacitors
10886763	7022581	2004-07-08	2006-04-04	Granted	United States of America	Interdigitated Capacitors
12616050	8039923	2009-11-10	2011-10-18	Granted	United States of America	Interdigitated Capacitors
10454027	6880140	2003-06-04	2005-04-12	Lapsed	United States of America	Method to selectively identify reliability risk die based on characteristics of local regions on the wafer
11031564	7390680	2005-01-06	2008-06-24	Granted	United States of America	Method to selectively identify reliability risk die based on characteristics of local regions on the wafer
12728412	8227319	2010-03-22	2012-07-24	Granted	United States of America	A Bipolar Junction Treatment Having A High Germanium Concentration In A Silicon Germanium Layer and a Method for Forming the Bipolar Junction Transistor
10598213	7714361	2006-08-21	2010-05-11	Lapsed	United States of America	A Bipolar Junction Transistor Having A High Germanium Concentration In A Silicon-Germanium Layer And A Method For Forming The Bipolar Junction Transistor
13348415		2012-01-11		Abandoned	United States of America	A Bipolar Junction Transistor Having A High Germanium Concentration In A Silicon-Germanium Layer and a Method for Forming the Bipolar Junction Transistor
10669398	6784044	2003-09-24	2004-08-31	Granted	United States of America	High Dopant Concentration Diffused Resistor And Method Of Manufacture Thereof
10256466	6690082	2002-09-27	2004-02-10	Granted	United States of America	A High Dopant Concentration Diffused Resistor And Method Of Manufacture Thereof
12208929	7776678	2008-09-11	2010-08-17	Lapsed	United States of America	A Thermally Stable BiCMOS Fabrication Method And Bipolar Junction Transistors Formed According To The Method
11361430	7439119	2006-02-24	2008-10-21	Lapsed	United States of America	A Thermally Stable BiCMOS Fabrication Method And Bipolar Junction Transistors Formed According To The Method
12832110	8084313	2010-07-08	2011-12-27	Granted	United States of America	A Thermally Stable BiCMOS Fabrication Method And Bipolar Junction Transistor Formed According To The Method
10828993		2004-04-21		Abandoned	United States of America	Method For Making A Radio Frequency Component And Component Produced Thereby
09715651	6743731	2000-11-17	2004-06-01	Granted	United States of America	Method For Making A Radio Frequency Component And Component Produced Thereby
09528071	6530074	2000-03-17	2003-03-04	Granted	United States of America	Apparatus For Verification Of IC Mask Sets
10317147	7103869	2002-12-11	2006-09-05	Lapsed	United States of America	Method Of Verifying IC Mask Sets
10718536	7456064	2003-11-24	2008-11-25	Lapsed	United States of America	High K Dielectric Material And Method Of Making A High K Dielectric Material
10155173	6680130	2002-05-28	2004-01-20	Lapsed	United States of America	High K Dielectric Material And Method Of Making A High K Dielectric Material

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12506090	7981305	2009-07-20	2011-07-19	Granted	United States of America	High Density Field Emission Elements And A Method For Forming Said Emission Elements
11057690	7564178	2005-02-14	2009-07-21	Lapsed	United States of America	High Density Field Emission Elements and a Method for Forming Said Emission Elements
09901073		2001-07-09		Abandoned	United States of America	Lateral High-Q Inductor For Semiconductor Devices
09416348	6292086	1999-10-12	2001-09-18	Granted	United States of America	Lateral High-Q Inductor For Semiconductor Devices
09894116	6458016	2001-06-28	2002-10-01	Granted	United States of America	Polishing Fluid, Polishing Method, Semiconductor Device And Semiconductor Device Fabrication Method
09483576	6375541	2000-01-14	2002-04-23	Granted	United States of America	Polishing Fluid, Polishing Method, Semiconductor Device and Semiconductor Device Fabrication Method
10637385	7067048	2003-08-08	2006-06-27	Lapsed	United States of America	Method to improve the control of electro-polishing by use of a plating electrode an electrolyte bath
11409377		2006-04-21		Abandoned	United States of America	Method To Improve The Control Of Electro-Polishing By Use Of A Plating Electrode In An Electrolyte Bath
10152879		2002-05-21		Abandoned	United States of America	Microsrtructure Control Of Copper Interconnects
09419986	6440849	1999-10-18	2002-08-27	Granted	United States of America	Microsrtructure Control Of Copper Interconnects
08814051	5936831	1997-03-06	1999-08-10	Expired	United States of America	Thin Film Tantalum Oxide Capacitors And Resulting Product
08918174	6075691	1997-08-25	2000-06-13	Expired	United States of America	THIN FILM CAPACITORS AND PROCESS FOR MAKING THEM
08678971	5821148	1996-07-12	1998-10-13	Expired	United States of America	Method of Fabricating a Segmented Emitter Low Noise Transistor
08484675	5723897	1995-06-07	1998-03-03	Expired	United States of America	Segmented Emitter Low Noise Transistor
09653616	6690037	2000-08-31	2004-02-10	Granted	United States of America	Field Plated Schottky Diode
10696136	6790753	2003-10-29	2004-09-14	Granted	United States of America	Field Plated Schottky Diode And Method Of Fabrication Thereof
09878657	6482694	2001-06-11	2002-11-19	Granted	United States of America	Semiconductor Device Structure Including A Tantalum Pentoxide Layer Sandwiched Between Silicon Nitride Layers
09259001	6294807	1999-02-26	2001-09-25	Granted	United States of America	Semiconductor Device Structure Including A Tantalum Pentoxide Layer Sandwiched Between Silicon Nitride Layers
11649197	7670203	2007-01-03	2010-03-02	Lapsed	United States of America	Process For Making An On-Chip Vacuum Tube Device
09651696	7259510	2000-08-30	2007-08-21	Granted	United States of America	On-Chip Vacuum Tube Device And Process For Making Device
09643784	6383923	2000-08-22	2002-05-07	Granted	United States of America	Article Comprising Vertically Nano-InterConnected Circuit Devices And Method For Making The Same
09426457	6340822	1999-10-05	2002-01-22	Granted	United States of America	Article Comprising Vertically Nano-InterConnected Circuit Devices And Method For Making The Same
11748569	7407824	2007-05-15	2008-08-05	Granted	United States of America	Guard Ring For Improved Matching
10941665	7253012	2004-09-14	2007-08-07	Granted	United States of America	Guard Ring For Improved Matching
10916322	7405116	2004-08-11	2008-07-29	Granted	United States of America	Application of gate edge liner to maintain gate length CD in a replacement gate transistor flow
12140773	8384165	2008-06-17	2013-02-26	Granted	United States of America	Application of Gate Edge Liner To Maintain Gate Length CD In A Replacement Gate Transistor Flow

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09410686	6410435	1999-10-01	2002-06-25	Granted	United States of America	Process For Fabricating Copper Interconnect For ULSI Integrated Circuits
10120707		2002-04-11		Abandoned	United States of America	Process For Fabricating Copper Interconnect For ULSI Integrated Circuits
12356600	8022481	2009-01-21	2011-09-20	Granted	United States of America	Robust Shallow Trench Isolation Structures And A Method For Forming Shallow Trench Isolation Structures
11321206	7514336	2005-12-29	2009-04-07	Lapsed	United States of America	Robust Shallow Trench Isolation Structures And A Method For Forming Shallow Trench Isolation Structures
09280103	6252245	1999-03-29	2001-06-26	Granted	United States of America	Device Comprising N-Channel Semiconductor Material
09476511	6387727	2000-01-03	2002-05-14	Granted	United States of America	Device Comprising N-Channel Semiconductor Material
11927950	7579245	2007-10-30	2009-08-25	Lapsed	United States of America	Dual-Gate Metal-Oxide Semiconductor Device
10999705	7329922	2004-11-30	2008-02-12	Granted	United States of America	Dual\(miGate Metal\(miOxide Semiconductor Device
09884736	6930056	2001-06-19	2005-08-16	Lapsed	United States of America	Plasma treatment of low dielectric constant dielectric material to form structures useful in formation of metal interconnects and/or filled vias for integrated circuit structure
10422270	6790784	2003-04-24	2004-09-14	Lapsed	United States of America	Plasma treatment of low dielectric constant dielectric material to form structures useful in formation of metal interconnects and/or filled vias for intergrated circuit structure
11530550	7271485	2006-09-11	2007-09-18	Granted	United States of America	Systems And Methods For Distributing I\(slO In A Semiconductor Device
11684674	7709861	2007-03-12	2010-05-04	Granted	United States of America	Systems And Methods For Supporting a Subset of Multiple Interface Types In A Semiconductor Device
09456224	6576529	1999-12-07	2003-06-10	Granted	United States of America	A Method Of Forming An Alignment Feature In Or On A Multi-Layered Semiconductor Structure
10704449	6977128	2003-11-07	2005-12-20	Lapsed	United States of America	Multi-Layered Semiconductor Structure
09867202	6706609	2001-05-29	2004-03-16	Granted	United States of America	Method Of Forming An Alignment Feature In Or On A Multi-Layered Semiconductor Structure
09804783	6586326	2001-03-13	2003-07-01	Lapsed	United States of America	Metal planarization system
10400278	6951808	2003-03-27	2005-10-04	Lapsed	United States of America	Metal planarization system
09617550	6569751	2000-07-17	2003-05-27	Granted	United States of America	Low via resistance system
10400252	6893962	2003-03-27	2005-05-17	Granted	United States of America	Low via resistance system
08718113	5804975	1996-09-18	1998-09-08	Expired	United States of America	Detecting Breakdown In Dielectric Layers
09002497	6043662	1998-01-02	2000-03-28	Expired	United States of America	Detecting Defects In Integrated Circuits
08702073	5969376	1996-08-23	1999-10-19	Expired	United States of America	An Organic Thin Film Transistor Having A Phthalocyanine Semiconductor Layer
09204002	6150191	1998-12-01	2000-11-21	Expired	United States of America	Method of Making an Organic Thin Film Transistor and Article Made by the Method
09135260	6015333	1998-08-17	2000-01-18	Expired	United States of America	Method Of Forming Planarized Layers In An Intergrated Circuit

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08769717	5836805	1996-12-18	1998-11-17	Expired	United States of America	Method of Forming Planarized Layers In An Integrated Circuit
09083072	6024829	1998-05-21	2000-02-15	Granted	United States of America	Method Of Eliminating Agglomerate Particles In A Polishing Slurry
09427306	6355184	1999-10-26	2002-03-12	Granted	United States of America	A Method Of Eliminating Agglomerate Particles In A Polishing Slurry
09992135	6750145	2001-11-14	2004-06-15	Granted	United States of America	A Method Of Eliminating Agglomerate Particles In A Polishing Slurry
08344785	5576763	1994-11-22	1996-11-19	Expired	United States of America	Single-Polysilicon CMOS Active Pixel
08675026	5835141	1996-07-03	1998-11-10	Expired	United States of America	Single-Polysilicon CMOS Active Pixel Image Sensor
08872250	6118351	1997-06-10	2000-09-12	Expired	United States of America	A Micromagnetic Device For Power Processing Applications And Method Of Manufacture Therefor
09292860	6191495	1999-04-16	2001-02-20	Expired	United States of America	Micromagnetic Device Having An Anisotropic Ferromagnetic Core and Method of Manufacture Therefor
09511343	6440750	2000-02-23	2002-08-27	Expired	United States of America	Method Of Making Integrated Circuit Having A Micromagnetic Device
10387846	7021518	2003-03-13	2006-04-04	Lapsed	United States of America	Micromagnetic Device For Power Processing Applications And Method Of Manufacture Therefor
09978871	6696744	2001-10-15	2004-02-24	Expired	United States of America	Integrated Circuit Having A Micromagnetic Device And Method Of Manufacture Therefor
09109963	6163234	1998-07-02	2000-12-19	Expired	United States of America	A Micromagnetic Device For Data Transmission Applications And Method Of Manufacture Therefor
09490655	6160721	2000-01-24	2000-12-12	Expired	United States of America	A Micromagnetic Device For Power Processing Applications And Method Of Manufacture Therefor
10400279	6927494	2003-03-27	2005-08-09	Lapsed	United States of America	Local interconnect
09966464	6576544	2001-09-28	2003-06-10	Granted	United States of America	Local interconnect
08381375	5616368	1995-01-31	1997-04-01	Expired	United States of America	Field Emission Devices Employing Activated Diamond Particle Emitters And Methods For Making Same
08361616	5709577	1994-12-22	1998-01-20	Expired	United States of America	Method Of Making Field Emission Devices Employing Ultra-Fine Diamond Particle Emitters
09006347	5977697	1998-01-13	1999-11-02	Expired	United States of America	Field Emission Devices Employing Diamond Particle Emitters
10368760	6747358	2003-02-18	2004-06-08	Granted	United States of America	Self-aligned alloy capping layers for copper interconnect structures
10004461	6566262	2001-11-01	2003-05-20	Granted	United States of America	Method for creating self-aligned alloy capping layers for copper interconnect structures
09533428	6312565	2000-03-23	2001-11-06	Granted	United States of America	Thin Film Deposition Of Mixed Metal Oxides
09917365	6540974	2001-07-27	2003-04-01	Granted	United States of America	Process For Making Mixed Metal Oxides
10038734	6762459	2001-12-31	2004-07-13	Granted	United States of America	Method For Fabricating MOS Device With Halo Implanted Region
09523782	6362054	2000-03-13	2002-03-26	Granted	United States of America	Method For Fabricating MOS Device With Halo Implanted Region
10368811	6977400	2003-02-18	2005-12-20	Lapsed	United States of America	Silicon germanium CMOS channel
09724444	6544854	2000-11-28	2003-04-08	Granted	United States of America	Silicon germanium CMOS channel

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
10641768	6987059	2003-08-14	2006-01-17	Granted	United States of America	Method and structure for creating ultra low resistance damascene copper wiring
11259965	7196420	2005-10-26	2007-03-27	Granted	United States of America	Method and structure for creating ultra low resistance damascene copper wiring
10802522		2004-03-17		Abandoned	United States of America	Interconnect Integration
10448082	6777807	2003-05-29	2004-08-17	Granted	United States of America	Interconnect integration
11314649		2005-12-21		Abandoned	United States of America	Variable Mask Field Exposure
12167381	7638245	2008-07-03	2009-12-29	Lapsed	United States of America	Variable Mask Field Exposure
10429376	7018753	2003-05-05	2006-03-28	Lapsed	United States of America	Variable mask field exposure
10951646		2004-09-28		Abandoned	United States of America	Plasma Removal Of High K Metal Oxide
10413051	7413996	2003-04-14	2008-08-19	Granted	United States of America	High k gate insulator removal
11337460	7220362	2006-01-23	2007-05-22	Granted	United States of America	Planarization with reduced dishing
10421068	7029591	2003-04-23	2006-04-18	Lapsed	United States of America	Planarization with reduced dishing
11695169		2007-04-02		Abandoned	United States of America	Planarization with Reduced Dishing
09894117	6439972	2001-06-28	2002-08-27	Granted	United States of America	Polishing Fluid, Polishing Method, Semiconductor Device And Semiconductor Device Fabrication Method
09483785	6328633	2000-01-14	2001-12-11	Granted	United States of America	Polishing Fluid, Polishing Method, Semiconductor Device And Semiconductor Device Fabrication Method
10964032		2004-10-12		Abandoned	United States of America	Via and Metal Line Interface Capable of Reducing the Incidence of Electro-Migration Induced Voids
10400297	6875693	2003-03-26	2005-04-05	Granted	United States of America	Via and metal line interface capable of reducing the incidence of electro-migration induced voids
11189625		2005-07-25		Abandoned	United States of America	Memory Device Having an Electron Trapping Layer in a High-K Dielectric Gate Stack
10123263	7132336	2002-04-15	2006-11-07	Granted	United States of America	Method and apparatus for forming a memory structure having an electron affinity region
10698169	6989565	2003-10-31	2006-01-24	Lapsed	United States of America	Memory device having an electron trapping layer in a high-K dielectric gate stack
09879642	6495312	2001-06-12	2002-12-17	Granted	United States of America	Method and apparatus for removing photoresist edge beads from thin film substrates
10263593	6614507	2002-10-03	2003-09-02	Granted	United States of America	Apparatus for removing photoresist edge beads from thin film substrates
09775223		2001-02-01		Abandoned	United States of America	Method and Apparatus for Removing Photoresist Edge Beads From Thin Film Substrates
10196787	6787180	2002-07-17	2004-09-07	Granted	United States of America	Exhaust flow control system
09666507	6579371	2000-09-20	2003-06-17	Granted	United States of America	Exhaust flow control system
10328614	6972217	2002-12-23	2005-12-06	Lapsed	United States of America	Low k polymer E-beam printable mechanical support

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
11225310	7358594	2005-09-12	2008-04-15	Granted	United States of America	Method of forming a low k polymer E-beam printable mechanical support
10243562	6885436	2002-09-13	2005-04-26	Lapsed	United States of America	Optical error minimization in a semiconductor manufacturing apparatus
11473627	7298458	2006-06-22	2007-11-20	Granted	United States of America	Optical error minimization in a semiconductor manufacturing apparatus
11075195	7098996	2005-03-07	2006-08-29	Lapsed	United States of America	Optical error minimization in a semiconductor manufacturing apparatus
09074837	6090656	1998-05-08	2000-07-18	Granted	United States of America	Linear capacitor and process for making same
09550381	6545305	2000-04-14	2003-04-08	Granted	United States of America	Linear capacitor and process for making same
10623082	7160805	2003-07-17	2007-01-09	Granted	United States of America	Inter-layer interconnection structure for large electrical connections
10272767	6642597	2002-10-16	2003-11-04	Granted	United States of America	Inter-layer interconnection structure for large electrical connections
10197956	6807655	2002-07-16	2004-10-19	Lapsed	United States of America	Adaptive off tester screening method based on intrinsic die parametric measurements
60381746		2002-05-17		Expired	United States of America	Process and Apparatus for Wafer Edge Profile Control Using Gas Flow Control Ring
10821708		2004-04-09		Abandoned	United States of America	Process and Apparatus for Wafer Edge Profile Control Using Gas Flow Control Ring
10200469	6753255	2002-07-18	2004-06-22	Granted	United States of America	Process for wafer edge profile control using gas flow control ring
10160812	6613637	2002-05-31	2003-09-02	Granted	United States of America	Composite spacer scheme with low overlapped parasitic capacitance
10458141	6737342	2003-06-09	2004-05-18	Granted	United States of America	Composite spacer scheme with low overlapped parasitic capacitance
10253158	6713394	2002-09-24	2004-03-30	Granted	United States of America	Process for planarization of integrated circuit structure which inhibits cracking of low dielectric constant dielectric material adjacent underlying raised structures
09661465	6489242	2000-09-13	2002-12-03	Granted	United States of America	Process for planarization of integrated circuit structure which inhibits cracking of low dielectric constant dielectric material adjacent underlying raised structures
10417708	7056392	2003-04-16	2006-06-06	Lapsed	United States of America	Wafer chucking apparatus and method for spin processor
11403137	7201176	2006-04-11	2007-04-10	Granted	United States of America	Wafer chucking apparatus for spin processor
09467622	6375791	1999-12-20	2002-04-23	Granted	United States of America	Method and apparatus for detecting presence of residual polishing slurry subsequent to polishing of a semiconductor wafer
10012847	6716364	2001-12-10	2004-04-06	Granted	United States of America	Method and apparatus for detecting presence of residual polishing slurry subsequent to polishing of a semiconductor wafer
10185537	6699766	2002-07-01	2004-03-02	Granted	United States of America	Method of fabricating an integral capacitor and gate transistor having nitride and oxide polish stop layers using chemical mechanical polishing elimination

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
10733034	7148146	2003-12-11	2006-12-12	Granted	United States of America	Method of fabricating an integral capacitor and gate transistor having nitride and oxide polish stop layers using chemical mechanical polishing elimination
10013572	6614093	2001-12-11	2003-09-02	Granted	United States of America	Integrated inductor in semiconductor manufacturing
10463158		2003-06-16		Abandoned	United States of America	Integrated Inductor in Semiconductor Manufacturing
60292832		2001-05-21		Expired	United States of America	Web-Bases Interface With Defect Database To View And Update Failure Events
10128534	6775630	2002-04-23	2004-08-10	Granted	United States of America	Web-based interface with defect database to view and update failure events
10845716		2004-05-14		Abandoned	United States of America	Method And Structure For Forming Dielectric Layers Having Reduced Dielectric Constants
10180661	6774057	2002-06-25	2004-08-10	Granted	United States of America	Method and structure for forming dielectric layers having reduced dielectric constants
09968944	6472314	2001-10-02	2002-10-29	Granted	United States of America	Diamond barrier layer
10238073	6734560	2002-09-09	2004-05-11	Granted	United States of America	Diamond barrier layer
10035501	6743474	2001-10-25	2004-06-01	Granted	United States of America	Method for growing thin films
10804980	7081296	2004-03-16	2006-07-25	Lapsed	United States of America	Method for growing thin films
11906196	8631547	2007-10-01	2014-01-21	Granted	United States of America	Method Of Isolation For Acoustic Resonator Devices
09497993	7296329	2000-02-04	2007-11-20	Granted	United States of America	Method Of Isolation For Acoustic Resonator Devices
12243137	7713811	2008-10-01	2010-05-11	Lapsed	United States of America	Multiple Doping Level Bipolar Junctions Transistors And Method For Forming
12727304	7910425	2010-03-19	2011-03-22	Granted	United States of America	Multiple Doping Level Bipolar Junctions Transistors And Method For Forming
10953894	7095094	2004-09-29	2006-08-22	Lapsed	United States of America	Multiple Doping Level Bipolar Junctions Transistors And Method For Forming
13026528	8143120	2011-02-14	2012-03-27	Granted	United States of America	Multiple Doping Level Bipolar Junctions Transistors And Method For Forming
11458270	7449388	2006-07-18	2008-11-11	Lapsed	United States of America	Method For Forming Multiple Doping Level Bipolar Junctions Transistors
10955238	7345364	2004-09-30	2008-03-18	Granted	United States of America	Structure And Method For Improved Heat Conduction For Semiconductor Devices
11968693	7498204	2008-01-03	2009-03-03	Granted	United States of America	Structure And Method For Improved Heat Conduction For Semiconductor Devices
10773900	7078280	2004-02-06	2006-07-18	Lapsed	United States of America	Vertical Replacement-Gate Silicon-On-Insulator Transistor
11419356	7259048	2006-05-19	2007-08-21	Granted	United States of America	Vertical Replacement-Gate Silicon-On-Insulator Transistor
09968234	6709904	2001-09-28	2004-03-23	Granted	United States of America	Vertical Replacement-Gate (VRG) Silicon-On-Insulator (SOI) CMOS Transistor
09968388		2001-09-28		Abandoned	United States of America	Lithographically Defined CMOS Threshold Voltage

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10619058	7049199	2003-07-14	2006-05-23	Granted	United States of America	Method Of Ion Implantation For Achieving Desired Dopant Concentration
09961477	6686604	2001-09-21	2004-02-03	Granted	United States of America	Multiple Operating Voltage Vertical Replacement-Gate (VRG) Transistor
10684713	7056783	2003-10-14	2006-06-06	Lapsed	United States of America	Multiple Operating Voltage Vertical Replacement-Gate (VRG) Transistor
10409423	6821831	2003-04-08	2004-11-23	Lapsed	United States of America	Electrostatic Discharge Protection In Double Diffused MOS Transistors
09896669	6576506	2001-06-29	2003-06-10	Granted	United States of America	Electrostatic Discharge Protection In Double Diffused MOS Transistors
10777250	6873171	2004-02-12	2005-03-29	Granted	United States of America	Integrated Circuit Early Life Failure Detection By Monitoring Changes In Current Signatures
09558130	6714032	2000-04-25	2004-03-30	Granted	United States of America	Integrated Circuit Early Life Failure Detection By Monitoring Changes In Current Signatures
10147384	6683382	2002-05-16	2004-01-27	Granted	United States of America	Semiconductor Device Having An Interconnect Layer With A Plurality Of Layout Regions Having Substantially Uniform Densities Of Active Interconnects And Dummy Fills
09484310	6436807	2000-01-18	2002-08-20	Granted	United States of America	Method For Making An Interconnect Layer And A Semiconductor Device Including The Same
08820063	5913146	1997-03-18	1999-06-15	Expired	United States of America	Semiconductor Device Having Aluminum Contacts Or Vias And Method Of Manufacture Therefor
09166832	6157082	1998-10-05	2000-12-05	Expired	United States of America	Semiconductor Device Having Aluminum Contacts Or Vias And Method Of Manufacture Therefor
09073556	6028359	1998-05-06	2000-02-22	Expired	United States of America	Integrated Circuit Having Amorphous Silicide Layer In Contacts And Vias And Method Of Manufacture Therefor
08816185	5858873	1997-03-12	1999-01-12	Expired	United States of America	Integrated Circuit Having Amorphous Silicide Layer In Contacts And Vias AndMethod Of Manufacture Therefor
09523210	6139995	2000-03-10	2000-10-31	Granted	United States of America	Method Of Manufacturing Schottky Gate Transistor Utilizing Alignment Techniques With Multiple Photoresist Layers
09111534	6042975	1998-07-08	2000-03-28	Granted	United States of America	Alignment Techniques For Photolithography
09049531	6033202	1998-03-27	2000-03-07	Granted	United States of America	Mold For Non-Photolithographic Fabrication Of Microstructures
09393032	6322736	1999-09-09	2001-11-27	Granted	United States of America	Mold For Non-Photolithographic Fabrication Of Microstructures
11999168	8153484	2007-12-04	2012-04-10	Granted	United States of America	Metal-Oxide-Semiconductor Device Having Trenched Diffusion Region And Method Of Forming Same
13428540	8648445	2012-03-23	2014-02-11	Lapsed	United States of America	Metal-Oxide-Semiconductor Device Having Trenched Diffusion Region And Method Of Forming Same
10953477	7338569	2004-09-29	2008-03-04	Granted	United States of America	Method And System Of Using Offset Gag For CMP Polishing Pad Alignment And Adjustment

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11968930	7527544	2008-01-03	2009-05-05	Lapsed	United States of America	System Of Using Offset Gage For CMP Polishing Pad Alignment And Adjustment
09150529	6215158	1998-09-10	2001-04-10	Granted	United States of America	Device And Method For Forming Semiconductor Interconnections In An Integrated Circuit Substrate
09631546	6503787	2000-08-03	2003-01-07	Granted	United States of America	Device And Method For Forming Semiconductor Interconnections In An Integrated Circuit Substrate
11641507	7537984	2006-12-19	2009-05-26	Lapsed	United States of America	III-V Power Field Effect Transistors
10948897	7180103	2004-09-24	2007-02-20	Granted	United States of America	III/V Power Field Effect Transistors
10926631	7109589	2004-08-26	2006-09-19	Granted	United States of America	Integrated Circuit With Substantially Perpendicular Wire Bonds
11494221	7465655	2006-07-27	2008-12-16	Granted	United States of America	Integrated Circuit With Substantially Perpendicular Wire Bonds
08752235	5811916	1996-11-19	1998-09-22	Expired	United States of America	Field Emission Devices Employing Enhanced Diamond Field Emitters
08752234	5744195	1996-11-19	1998-04-28	Expired	United States of America	Field Emission Devices Employing Enhanced Diamond Field Emitters
08331458	5637950	1994-10-31	1997-06-10	Expired	United States of America	Field Emission Devices Employing Enhanced Diamond Field Emitters
10850812	7235489	2004-05-21	2007-06-26	Granted	United States of America	Device And Method To Eliminate Shorting Induced By Via To Metal Misalignment
11738050	7675179	2007-04-20	2010-03-09	Lapsed	United States of America	Device And Method To Eliminate Shorting Induced By Via To Metal Misalignment
09246402	6214675	1999-02-08	2001-04-10	Granted	United States of America	A Method For Fabricating A Merged Integrated Circuit Device
09789254	6627963	2001-02-20	2003-09-30	Granted	United States of America	Method For Fabricating A Merged Integrated Circuit Device
10300254	6762457	2002-11-20	2004-07-13	Granted	United States of America	LDMOS Device Having A Tapered Oxide
09641086	6506641	2000-08-17	2003-01-14	Granted	United States of America	The Use Of Selective Oxidation To Improve LDMOS Power Transistors
11419252	7381607	2006-05-19	2008-06-03	Granted	United States of America	A Method Of Forming A Spiral Inductor In A Semiconductor Substrate
10646997	7075167	2003-08-22	2006-07-11	Lapsed	United States of America	A Spiral Inductor Formed In A Semiconductor Substrate And A Method For Forming The Inductor
09335646		1999-06-18		Abandoned	United States of America	A CMOS Integrated Circuit Having Vertical Transistors And A Process For Fabricating Same
10211674	6653181	2002-08-02	2003-11-25	Granted	United States of America	A CMOS Integrated Circuit Having Vertical Transistors And A Process For Fabricating Same
10918981	7345354	2004-08-16	2008-03-18	Granted	United States of America	Increased Quality Factor Of A Varactor In An Integrated Circuit Via A High Conductive Region In A Well
10454133	6825089	2003-06-04	2004-11-30	Granted	United States of America	Increased Quality Factor Of A Varactor In An Integrated Circuit Via A High Conductive Region In A Well
09652479	6373087	2000-08-31	2002-04-16	Granted	United States of America	Methods of Fabricating A Metal-Oxide-Metal Capacitor And Associated Apparatus
10080186	6730601	2002-02-21	2004-05-04	Granted	United States of America	Methods of Fabricating A Metal-Oxide-Metal Capacitor

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11116903	7297606	2005-04-28	2007-11-20	Granted	United States of America	Metal\(miOxide\(miSemiconductor Device Including A Buried Lightly\(miDoped Drain Region
10675633	6927453	2003-09-30	2005-08-09	Lapsed	United States of America	Metal-Oxide-Semiconductor Device Including A Buried Lightly-Doped Drain Region
09540473	6373266	2000-03-31	2002-04-16	Granted	United States of America	Apparatus And Method For Determining Process Width Variations In Integrated Circuits
10053097	6728940	2002-01-18	2004-04-27	Granted	United States of America	Apparatus And Method For Determining Process Width Variations In Integrated Circuits
08353015	5576240	1994-12-09	1996-11-19	Expired	United States of America	Method for Making A Metal to metal Capacitor
08644086	5851870	1996-05-09	1998-12-22	Expired	United States of America	Method For Making A Capacitor
08472033	5654581	1995-06-06	1997-08-05	Expired	United States of America	Integrated Circuit Capacitor
08909563	6040616	1997-08-12	2000-03-21	Expired	United States of America	A Device and Method of Forming A Metal To Metal Capacitor Within an Integrated Circuit
08863713	5825073	1997-05-27	1998-10-20	Expired	United States of America	An Electronic Component For An Integrated Circuit
10179057		2002-06-25		Abandoned	United States of America	A Graded Grown Gate Oxide (G3) For A Vertical Replacement Gate (VRG) MOSFET.
10986984	7169714	2004-11-12	2007-01-30	Granted	United States of America	Method And Structure For Graded Gate Oxides On Vertical And Non-Planar Surfaces
09481992	6541394	2000-01-11	2003-04-01	Granted	United States of America	Method Of Making A Graded Grown, High Quality Oxide Layer For A Semiconductor Device
10171701		2002-06-14		Abandoned	United States of America	Coupling Capacitance Reduction
09906331	6432812	2001-07-16	2002-08-13	Granted	United States of America	Method of coupling capacitance reduction
11392375		2006-03-29		Abandoned	United States of America	High\(miDensity Inter\(miDie Interconnect Structure
10638248	7045835	2003-08-08	2006-05-16	Granted	United States of America	High\(miDensity Inter\(miDie Interconnect Structure
11540056	7239160	2006-09-29	2007-07-03	Granted	United States of America	Method Of Electrical Testing Of An Integrated Circuit With An Electrical Probe
11138152	7132840	2005-05-26	2006-11-07	Granted	United States of America	Method Of Electrical Testing
08979297	5849639	1997-11-26	1998-12-15	Granted	United States of America	Method For Removing Etching Residues And Contaminants
09164283	6046115	1998-10-01	2000-04-04	Granted	United States of America	Method for Removing Etching Residues and Contaminants
09434424	6284663	1999-11-04	2001-09-04	Granted	United States of America	Method For Making Field Effect Devices And Capacitors With Thin Film Dielectrics And Resulting Devices
09060420	6001741	1998-04-15	1999-12-14	Granted	United States of America	Method For Making Field Effect Devices And Capacitors With Improved Thin Film Dielectrics And Resulting Devices
09651447	6670242	2000-08-30	2003-12-30	Granted	United States of America	Method For Making An Integrated Circuit Device Including A Graded, Grown, High Quality Gate Oxide Layer And A Nitride Layer
09651593		2000-08-30		Abandoned	United States of America	Method For Making An Integrated Circuit Device Including A Graded, Grown, High Quality Gate Oxide Layer And A Gate Electrode Layer With Improved Dopant Activation

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09651857		2000-08-30		Abandoned	United States of America	Integrated Circuit Device Including a Graded, Grown, High Quality Gate Oxide Layer
09651592		2000-08-30		Abandoned	United States of America	Flash Device w\(sIG3 (High Temperature) Oxide Grown In FTP or RTP Furnace
09651458		2000-08-30		Abandoned	United States of America	Integrated Circuit Device Including a Graded, Grown, High Quality Gate Oxide Layer And a Nitride Layer
09651450		2000-08-30		Abandoned	United States of America	Method For Making A High Quality, Graded, Grown Gate Oxide Layer Including Native Oxide Removal
09651451		2000-08-30		Abandoned	United States of America	Method For Making An Integrated Circuit Device Including A Graded, Grown, High Quality Gate Oxide Layer
09015981	6153920	1998-01-30	2000-11-28	Expired	United States of America	A Semiconductor Device Configured to Control Dopant Diffusion In the Semiconductor Device Substrate
08862226	5731626	1997-05-23	1998-03-24	Expired	United States of America	Process For Controlling Dopant Diffusion In A Semiconductor Layer And Semiconductor Layer Formed Thereby
09650164	6635116	2000-08-29	2003-10-21	Granted	United States of America	Residual oxygen reduction system
10640530		2003-08-13		Abandoned	United States of America	Residual Oxygen Reduction System
09006918	6133077	1998-01-13	2000-10-17	Granted	United States of America	Formation of high-voltage and low-voltage devices on a semiconductor substrate
09495512	6194766	2000-02-01	2001-02-27	Granted	United States of America	Integrated circuit having low voltage and high voltage devices on a common semiconductor substrate
09724225	6521549	2000-11-28	2003-02-18	Granted	United States of America	Method of reducing silicon oxynitride gate insulator thickness in some transistors of a hybrid integrated circuit to obtain increased differential in gate insulator thickness with other transistors of the hybrid circuit
10304631	6656805	2002-11-26	2003-12-02	Lapsed	United States of America	Method of reducing silicon oxynitride gate insulator thickness in some transistors of a hybrid integrated circuit to obtain increased differential in gate insulator thickness with other transistors of the hybrid circuit
10260824	7118985	2002-09-27	2006-10-10	Lapsed	United States of America	Method of forming a metal-insulator-metal capacitor in an interconnect cavity
09496971	6504202	2000-02-02	2003-01-07	Granted	United States of America	Interconnect-embedded metal-insulator-metal capacitor
09442078	6179956	1999-11-16	2001-01-30	Granted	United States of America	Method and apparatus for using across wafer back pressure differentials to influence the performance of chemical mechanical polishing
09005364		1998-01-09		Abandoned	United States of America	Method And Apparatus For Using Across Wafer Back Pressure Differentials To Influence The Performance Of Chemical Mechanical Polishing

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09427572	6174798	1999-10-26	2001-01-16	Granted	United States of America	Process for forming metal interconnect stack for integrated circuit structure
09261270	6087726	1999-03-01	2000-07-11	Granted	United States of America	Metal interconnect stack for integrated circuit structure
09454257	6297558	1999-12-02	2001-10-02	Expired	United States of America	Slurry filling a recess formed during semiconductor fabrication
08899111	6069085	1997-07-23	2000-05-30	Expired	United States of America	Slurry filling a recess formed during semiconductor fabrication
10706120	6855586	2003-11-12	2005-02-15	Granted	United States of America	Low voltage breakdown element for ESD trigger device
10055082	6710990	2002-01-22	2004-03-23	Granted	United States of America	Low voltage breakdown element for ESD trigger device
10153011	6794756	2002-05-21	2004-09-21	Granted	United States of America	Integrated circuit structure having low dielectric constant material and having silicon oxynitride caps over closely spaced apart metal lines
09425552	6423628	1999-10-22	2002-07-23	Granted	United States of America	Method of forming integrated circuit structure having low dielectric constant material and having silicon oxynitride caps over closely spaced apart metal lines
09583434	6383332	2000-05-31	2002-05-07	Granted	United States of America	Endpoint detection method and apparatus which utilize a chelating agent to detect a polishing endpoint
09212503	6117779	1998-12-15	2000-09-12	Granted	United States of America	Endpoint detection method and apparatus which utilize a chelating agent to detect a polishing endpoint
08768905	5821572	1996-12-17	1998-10-13	Expired	United States of America	Simple BICMOS process for creation of low trigger voltage SCR and zener diode pad protection
09081475	6130117	1998-05-19	2000-10-10	Expired	United States of America	Simple BICMOS process for creation of low trigger voltage SCR and zener diode pad protection
08469293		1995-06-06		Abandoned	United States of America	Polymorphic Rectilinear Thieving Pad
08781992	5736680	1997-01-06	1998-04-07	Expired	United States of America	Polymorphic rectilinear thieving pad
09395507	6328802	1999-09-14	2001-12-11	Granted	United States of America	Method and apparatus for determining temperature of a semiconductor wafer during fabrication thereof
09952540	6794310	2001-09-14	2004-09-21	Granted	United States of America	Method and apparatus for determining temperature of a semiconductor wafer during fabrication thereof
09070188	5920110	1998-04-30	1999-07-06	Expired	United States of America	Antifuse device for use on a field programmable interconnect chip
08534008	5844297	1995-09-26	1998-12-01	Expired	United States of America	Antifuse device for use on a field programmable interconnect chip
09245193	6063672	1999-02-05	2000-05-16	Granted	United States of America	NMOS electrostatic discharge protection device and method for CMOS integrated circuit
09476295		1999-12-30		Abandoned	United States of America	NMOS Electrostatic Discharge Protection Device and Method for CMOS Integrated Circuit
09072705	6066560	1998-05-05	2000-05-23	Granted	United States of America	Non-linear circuit elements on integrated circuits
09467340	6228767	1999-12-20	2001-05-08	Granted	United States of America	Non-linear circuit elements on integrated circuits
09228906	6261406	1999-01-11	2001-07-17	Lapsed	United States of America	Confinement device for use in dry etching of substrate surface and method of dry etching a wafer surface

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09884805	6852243	2001-06-18	2005-02-08	Lapsed	United States of America	Confinement device for use in dry etching of substrate surface and method of dry etching a wafer surface
10893659	7071094	2004-07-16	2006-07-04	Granted	United States of America	Dual layer barrier film techniques to prevent resist poisoning
11418873	7393780	2006-05-04	2008-07-01	Granted	United States of America	Dual layer barrier film techniques to prevent resist poisoning
09896363	6812134	2001-06-28	2004-11-02	Granted	United States of America	Dual layer barrier film techniques to prevent resist poisoning
12947948	8289051	2010-11-17	2012-10-16	Lapsed	United States of America	Input/Output Core Design and Method of Manufacture Therefor
13443691		2012-04-10		Abandoned	United States of America	Input/Output Core Design and Method of Manufacture Therefor
2008801316818	ZL200880131681.8	2008-09-19	2013-06-19	Lapsed	China	Allotropic Or Morphologic Change In Silicon Induced By Electromagnetic Radiation For Resistance Tuning Of Integrated Circuits
14073526		2013-11-06		Abandoned	United States of America	Allotropic Or Morphologic Change In Silicon Induced By Electromagnetic Radiation For Resistance Tuning Of Integrated Circuits
098130968	I413235	2009-09-14	2013-10-21	Lapsed	Taiwan	Allotropic Or Morphologic Change In Silicon Induced By Electromagnetic Radiation For Resistance Tuning Of Integrated Circuits
13119005	8610215	2011-03-15	2013-12-17	Granted	United States of America	Allotropic Or Morphologic Change In Silicon Induced By Electromagnetic Radiation For Resistance Tuning Of Integrated Circuits
1020117008762	10-1306685	2008-09-19	2013-09-04	Lapsed	Korea, Republic of (KR)	Allotropic Or Morphologic Change In Silicon Induced By Electromagnetic Radiation For Resistance Tuning Of Integrated Circuits
08430084	5891784	1995-04-27	1999-04-06	Expired	United States of America	Transistor Fabrication Method
08587061	6498080	1996-01-16	2002-12-24	Expired	United States of America	Transistor Fabrication Method
12114589		2008-05-02		Abandoned	United States of America	Transistor Fabrication Method
10224220		2002-08-20		Abandoned	United States of America	Transistor Fabrication Method
12689749	8030199	2010-01-19	2011-10-04	Granted	United States of America	Transistor Fabrication Method
08832245	5780329	1997-04-03	1998-07-14	Expired	United States of America	Process for fabricating a moderate-depth diffused emitter bipolar transistor in a BICMOS device without using an additional mask
08823305	6211096	1997-03-21	2001-04-03	Expired	United States of America	Tunable dielectric constant oxide and method of manufacture
2000008156	4777494	2000-01-17	2011-07-08	Granted	Japan	Pyrogenic Devoid Wet Oxidation
09231265	6335295	1999-01-15	2002-01-01	Granted	United States of America	Flame-free wet oxidation
10094520	6654226	2002-03-08	2003-11-25	Lapsed	United States of America	Thermal low k dielectrics
09064802	6418353	1998-04-22	2002-07-09	Granted	United States of America	Automating photolithography in the fabrication of integrated circuits
1998287829	4555410	1998-10-09	2010-07-23	Lapsed	Japan	Apparatus And A Method For Forming An Oxide Film On A Semiconductor

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09474666	6323106	1999-12-29	2001-11-27	Granted	United States of America	Dual nitrogen implantation techniques for oxynitride formation in semiconductor devices
1998096236	4565674	1998-04-08	2010-08-13	Lapsed	Japan	Pre-Conditioning Polishing Pads For Chemical-Mechanical Polishing
87102678	115428	1998-02-25	2000-05-11	Lapsed	Taiwan	Method For Artificially-Inducing Reverse Short-Channel Efforts In Deep Sub-Micron Cmos Devices
09098019	6147409	1998-06-15	2000-11-14	Granted	United States of America	Modified multilayered metal line structure for use with tungsten-filled vias in integrated circuit structures
09920890	6601008	2001-08-02	2003-07-29	Granted	United States of America	Parametric device signature
09098032	6037262	1998-06-15	2000-03-14	Granted	United States of America	Process for forming vias, and trenches for metal lines, in multiple dielectric layers of integrated circuit structure
87103103	135215	1998-03-04	2001-06-07	Lapsed	Taiwan	Insulated-Gate Field-Effect Transistors Having Different Gate Capacitances
09896958	6358806	2001-06-29	2002-03-19	Granted	United States of America	Silicon carbide CMOS channel
10014449	4381491	1998-01-27	2009-10-02	Lapsed	Japan	Insulated-Gate Field-Effect Transistors Having Different Gate Capacitances
1998094757	4996781	1998-04-07	2012-05-18	Lapsed	Japan	Process For Forming Improved Cobalt Silicide Layer On Integrated Circuit Structure Using Two Capping Layers.
1998051650	4881497	1998-03-04	2011-12-09	Lapsed	Japan	Method And Apparatus For Eliminating Peeling At End Edge Of Semiconductor Substrate In Metal Organic Chemical Vapor Deposition Of Titanium Nitrite
09081337	6073361	1998-05-19	2000-06-13	Granted	United States of America	Apparatus for externally monitoring RPM of spin rinse dryer
09069027	6037233	1998-04-27	2000-03-14	Granted	United States of America	Metal-encapsulated polysilicon gate and interconnect
09063801	6061814	1998-04-21	2000-05-09	Granted	United States of America	Test circuitry for determining the defect density of a semiconductor process as a function of individual metal layers
09079413	6166422	1998-05-13	2000-12-26	Granted	United States of America	Inductor with cobalt/nickel core for integrated circuit structure with high inductance and high Q-factor
9762865	0271949	1997-11-25	2000-08-21	Lapsed	Korea, Republic of (KR)	Method For Artificially-Inducing Reverse Short-Channel Effects In Deep Sub-Micron Cmos Devices
09046113	6013952	1998-03-20	2000-01-11	Granted	United States of America	Structure and method for measuring interface resistance in multiple interface contacts and via structures in semiconductor devices
09076399	6331468	1998-05-11	2001-12-18	Granted	United States of America	Formation of integrated circuit structure using one or more silicon layers for implantation and out-diffusion in formation of defect-free source/drain regions and also for subsequent formation of silicon nitride spacers
08979733		1997-11-26		Abandoned	United States of America	Purging Gas Control Structure For Cvd Chamber

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09081403		1998-05-18		Abandoned	United States of America	Integrated Circuit Structure With Thin Dielectric Between At Least Local Interconnect Level And First Metal Interconnect Level, And Process For Making Same
09882124	6503828	2001-06-14	2003-01-07	Granted	United States of America	Process for selective polishing of metal-filled trenches of integrated circuit structures
09076502	6127286	1998-05-11	2000-10-03	Granted	United States of America	Apparatus and process for deposition of thin film on semiconductor substrate while inhibiting particle formation and deposition
09150220	6248180	1998-09-09	2001-06-19	Granted	United States of America	Method for removing particles from a semiconductor wafer
09037588	6087229	1998-03-09	2000-07-11	Granted	United States of America	Composite semiconductor gate dielectrics
09210184	6288773	1998-12-11	2001-09-11	Granted	United States of America	Method and apparatus for removing residual material from an alignment mark of a semiconductor wafer
08990315	6059637	1997-12-15	2000-05-09	Granted	United States of America	Process for abrasive removal of copper from the back surface of a silicon substrate
08915000	5865666	1997-08-20	1999-02-02	Expired	United States of America	Apparatus and method for polish removing a precise amount of material from a wafer
08887910	5902704	1997-07-02	1999-05-11	Expired	United States of America	Process for forming photoresist mask over integrated circuit structures with critical dimension control
08991397	6162714	1997-12-16	2000-12-19	Granted	United States of America	Method of forming thin polygates for sub quarter micron CMOS process
08919394	5851890	1997-08-28	1998-12-22	Expired	United States of America	Process for forming integrated circuit structure with metal silicide contacts using notched sidewall spacer on gate electrode
08914854	5882251	1997-08-19	1999-03-16	Expired	United States of America	Chemical mechanical polishing pad slurry distribution grooves
08879659	5933757	1997-06-23	1999-08-03	Expired	United States of America	Etch process selective to cobalt silicide for formation of integrated circuit structures
08351516	5627099	1994-12-07	1997-05-06	Expired	United States of America	Method of manufacturing semiconductor device
08942991	5944585	1997-10-02	1999-08-31	Expired	United States of America	Use of abrasive tape conveying assemblies for conditioning polishing pads
08918846	5931719	1997-08-25	1999-08-03	Expired	United States of America	Method and apparatus for using pressure differentials through a polishing pad to improve performance in chemical mechanical polishing
08772310	5769692	1996-12-23	1998-06-23	Expired	United States of America	On the use of non-spherical carriers for substrate chemi-mechanical polishing
08760466	5770520	1996-12-05	1998-06-23	Expired	United States of America	Method of making a barrier layer for via or contact opening of integrated circuit structure
08833597	5902129	1997-04-07	1999-05-11	Expired	United States of America	Process for forming improved cobalt silicide layer on integrated circuit structure using two capping layers

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08730809	5717490	1996-10-17	1998-02-10	Expired	United States of America	Method for identifying order skipping in spectroreflective film measurement equipment
08592870	5953631	1996-01-24	1999-09-14	Expired	United States of America	Low stress, highly conformal CVD metal thin film
08586587	6303995	1996-01-11	2001-10-16	Expired	United States of America	Sidewall structure for metal interconnect and method of making same
08475028	5661069	1995-06-06	1997-08-26	Expired	United States of America	Method of forming an MOS-type integrated circuit structure with a diode formed in the substrate under a polysilicon gate electrode to conserve space
2000322452	3527700	2000-10-23	2004-02-27	Lapsed	Japan	Low Dielectric Constant Silicon Oxide-Based Dielectric Layer for Integrated Circuit Structures Having Improved Compatibility with Via Filler Materials, and Method of Making Same
11524107	7408227	2006-09-20	2008-08-05	Granted	United States of America	Apparatus and method of manufacture for integrated circuit and CMOS device including epitaxially grown dielectric on silicon carbide
09777996	6724404	2001-02-06	2004-04-20	Granted	United States of America	Cluster tool reporting system
989197264	69831734.3	1998-04-02	2005-09-28	Granted	Germany (Federal Republic of)	Process for Fabricating a Moderate-Depth Diffused Emitter Bipolar Transistor in a BICMOS Device Without Using an Additional Mask
013033220	60145418.9	2001-04-09	2011-10-05	Lapsed	Germany (Federal Republic of)	Copper ICs Interconnect
2012122801	5744790	2012-05-30	2015-05-15	Granted	Japan	Damascene Capacitors For Integrated Circuits
200864008		2000-05-10		Abandoned	Japan	Damascene Capacitors For Integrated Circuits
09405805	6225215	1999-09-24	2001-05-01	Granted	United States of America	Method for enhancing anti-reflective coatings used in photolithography of electronic devices
10973851	7204920	2004-10-25	2007-04-17	Granted	United States of America	Contact ring design for reducing bubble and electrolyte effects during electrochemical plating in manufacturing
10945777	7300869	2004-09-20	2007-11-27	Granted	United States of America	Integrated barrier and seed layer for copper interconnect technology
10953322	7550236	2004-09-29	2009-06-23	Lapsed	United States of America	MULTI WAVELENGTH MULTI LAYER PRINTING
11012003	7372547	2004-12-14	2008-05-13	Granted	United States of America	Process and apparatus for achieving single exposure pattern transfer using maskless optical direct write lithography
10984286	7148556	2004-11-09	2006-12-12	Granted	United States of America	High performance diode-implanted voltage-controlled poly resistors for mixed-signal and RF applications
09426061	6756674	1999-10-22	2004-06-29	Granted	United States of America	Low dielectric constant silicon oxide-based dielectric layer for integrated circuit structures having improved compatibility with via filler materials, and method of making same
10949760	7315360	2004-09-24	2008-01-01	Granted	United States of America	Surface coordinate system

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
10820494	7119432	2004-04-07	2006-10-10	Lapsed	United States of America	Method and apparatus for establishing improved thermal communication between a die and a heatspreader in a semiconductor package
60144277		1999-07-15		Expired	United States of America	Field Emitting Device Comprising Field-Concentrating Nanoconductor Assembly And Method For Making The Same
60141657		1999-06-30		Expired	United States of America	Solvent Absorption By CMP Pads And Its Relationship To Pad Chemistry
60130378		1999-04-21		Expired	United States of America	Dark Spin Rinse/Dry
60115525		1999-01-12		Expired	United States of America	Multi-Layered WSi/WSiN/Poly (Optional) Resistor for Si IC's
60110711		1998-12-03		Expired	United States of America	Semiconductor Device With Increased Gate Insulator Lifetime
60117186		1999-01-26		Expired	United States of America	Planarization Technique For HDPCVD FSG Layer
60168036		1999-11-30		Expired	United States of America	MOS Transistor And Method Of Manufacture
60378476		2002-05-07		Expired	United States of America	A Thin Film Toroidal Inductor
60167132		1999-11-23		Expired	United States of America	Electrically Measured IC Wafer Masks Version Control Indicator
09698375	6306780	2000-10-26	2001-10-23	Granted	United States of America	Method For Making A Photoresist Layer Having Increased Resistance To Blistering, Peeling, Lifting, Or Reticulation
09745236	6606371	2000-12-19	2003-08-12	Granted	United States of America	X-Ray System
10159268	6847433	2002-06-03	2005-01-25	Lapsed	United States of America	Holder, System, And Process For Improving Overlay In Lithography
08558997	5814562	1995-11-16	1998-09-29	Expired	United States of America	Process For Semiconductor Device Fabrication
09469090	6375912	1999-12-21	2002-04-23	Granted	United States of America	Electrochemical Abatement Of Perfluorinated Compounds
09519193	6331484	2000-03-06	2001-12-18	Granted	United States of America	Titanium-Tantalum Barrier Layer Film And Method For Forming The Same
1020047013135	10-979658	2003-02-24	2010-08-27	Lapsed	Korea, Republic of (KR)	Monitoring And Control Of A Fabrication Process
09967074	6727165	2001-09-28	2004-04-27	Granted	United States of America	Fabrication of metal contacts for deep-submicron technologies
10883137	7015096	2004-07-01	2006-03-21	Lapsed	United States of America	Bimetallic oxide compositions for gate dielectrics
09652571	6556409	2000-08-31	2003-04-29	Granted	United States of America	An Integrated Circuit Including ESD Circuits For A Multi-Chip Module And A Method Therefor
09956382	6759730	2001-09-18	2004-07-06	Granted	United States of America	Bipolar Junction Transistor Compatible With Vertical Replacement Gate Transistors
10693110	6927177	2003-10-24	2005-08-09	Lapsed	United States of America	Chemical mechanical electropolishing system
10929706	8685633	2004-08-30	2014-04-01	Lapsed	United States of America	Method for Optimizing Wafer Edge Patterning
10158775	6985229	2002-05-30	2006-01-10	Lapsed	United States of America	Overlay Metrology Using Scatterometry Profiling
10875029	7494888	2004-06-23	2009-02-24	Lapsed	United States of America	Device And Method Using Isotopically Enriched Silicon
10439863	6710416	2003-05-16	2004-03-23	Granted	United States of America	Split-Gate Metal-Oxide-Semiconductor Device
10659134	7138292	2003-09-10	2006-11-21	Granted	United States of America	Apparatus and method of manufacture for integrated circuit and CMOS device including epitaxially grown dielectric on silicon carbide
09310388	6750495	1999-05-12	2004-06-15	Granted	United States of America	Damascene Capacitors For Integrated Circuits

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
10700791	7023230	2003-11-03	2006-04-04	Lapsed	United States of America	Method for testing IDD at multiple voltages
09298068	6191017	1999-04-22	2001-02-20	Granted	United States of America	A Method Of Forming A Multi-Layered Dual-Polysilicon Structure
09439048	6459946	1999-11-12	2002-10-01	Granted	United States of America	Method And System For Determining Operating Staffing
09437930	6424160	1999-11-10	2002-07-23	Granted	United States of America	Testing Insulation Between Conductors
09286869	6048256	1999-04-06	2000-04-11	Granted	United States of America	Apparatus And Method For Continuous Delivery And Conditioning Of A Polishing Slurry
09095468	6388290	1998-06-10	2002-05-14	Granted	United States of America	Single Crystal Silicon On Polycrystalline Silicon Integrated Circuits
08907834	6133618	1997-08-14	2000-10-17	Expired	United States of America	A Semiconductor Device Having An Anti\(miReflective Layer And A Method Of Manufacture Thereof
08924730	6074933	1997-09-05	2000-06-13	Expired	United States of America	Integrated Circuit Fabrication
08941556	5972179	1997-09-30	1999-10-26	Expired	United States of America	Silicon IC Contacts Using Composite TiN Barrier Layer
11016014	7075179	2004-12-17	2006-07-11	Granted	United States of America	System for implementing a configurable integrated circuit
10607116	6979251	2003-06-26	2005-12-27	Lapsed	United States of America	Method and apparatus to add slurry to a polishing system
09016475	5994221	1998-01-30	1999-11-30	Granted	United States of America	Device And Method Of Fabricating Vias For ULSI Metallization And Interconnect
09243377	6194750	1999-02-01	2001-02-27	Granted	United States of America	Integrated Circuit Comprising Means For High Frequency Signal Transmission
08853582	5767561	1997-05-09	1998-06-16	Expired	United States of America	Integrated Circuit Devices With Isolated Circuit Elements
10658168	7079966	2003-09-08	2006-07-18	Granted	United States of America	Method of qualifying a process tool with wafer defect maps
08971422	5993947	1997-11-17	1999-11-30	Granted	United States of America	Low Temperature Coefficient Dielectric Material Comprising Binary Calcium Niobate And Calcium Tantalate Oxides
08346806	5549512	1994-11-30	1996-08-27	Expired	United States of America	Mini environment for Hazardous Process Tools
08326444	5510230	1994-10-20	1996-04-23	Expired	United States of America	Device Fabrication Using DUV/EUV Pattern Delineation
08589229	5656399	1996-01-22	1997-08-12	Expired	United States of America	Process for Making An X-Ray Mask
08346810	5441614	1994-11-30	1995-08-15	Expired	United States of America	Method and Apparatus for Planar Magnetron Sputtering
08664227	5670062	1996-06-07	1997-09-23	Expired	United States of America	Method For Producing Tapered Lines
08683291	5656515	1996-07-18	1997-08-12	Expired	United States of America	Method Of Making High-Speed Double-Heterostructure Bipolar Transistor Devices
10452360	7332062	2003-06-02	2008-02-19	Granted	United States of America	Electroplating tool for semiconductor manufacture having electric field control
08413527	5663677	1995-03-30	1997-09-02	Expired	United States of America	Integrated Circuit Multi-Level Interconnection Technique
08439040	5538819	1995-04-10	1996-07-23	Expired	United States of America	Self-Aligned Alignment Marks For Phase-Shifting Masks
08351977	5599730	1994-12-08	1997-02-04	Expired	United States of America	Poly-Buffered LOCOS
08353032	5574291	1994-12-09	1996-11-12	Expired	United States of America	Article Comprising A Thin Film Transistor With Low Conductivity Organic Layer
08918781	5958654	1997-08-25	1999-09-28	Expired	United States of America	Lithographic Process And Energy-Sensitive Material For Use Therein
08324842	6524645	1994-10-18	2003-02-25	Granted	United States of America	A Process For The Electroless Deposition of Metal On A Substrate

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08163967	5959342	1993-12-08	1999-09-28	Expired	United States of America	Semiconductor Device Having A High Voltage Termination Improvement
10410925	6739953	2003-04-09	2004-05-25	Granted	United States of America	Mechanical stress free processing method
07707365	5879997	1991-05-30	1999-03-09	Expired	United States of America	Method For Forming Self Aligned Polysilicon Contact
10423096	6722948	2003-04-25	2004-04-20	Granted	United States of America	Pad conditioning monitor
09547132	6461225	2000-04-11	2002-10-08	Granted	United States of America	Local Area Alloying For Preventing Dishing Of Copper During Chemical Mechannical Polishing (CMP)
10412867	7079963	2003-04-14	2006-07-18	Granted	United States of America	Modified binary search for optimizing efficiency of data collection time
979319175	69709934.2	1997-07-15	2002-01-09	Expired	Germany (Federal Republic of)	Subsonic to Supersonic and Ultrasonic Conditioning of Polishing Pad in a Chemical Mechanical Polishing Apparatus
89123228	NI-165325	2000-11-21	2002-10-21	Lapsed	Taiwan	Method For Making Field Effect Devices And Capacitors With Thin Film Dielectrics And Resulting Devices
91119024	NI-198062	2002-08-22	2004-07-07	Lapsed	Taiwan	Multiple Operating Voltage Vertical Replacement-Gate (VRG) Transistor
90108450	I223427	2001-04-09	2004-11-01	Lapsed	Taiwan	Interconnections To Copper IC's
090113472	NI-157181	2001-06-04	2002-05-11	Lapsed	Taiwan	A Method For Reducing Dishing Related Issues During The Formation Of Shallow Trench Isolation Structures
89104065	NI-144505	2000-03-07	2001-11-11	Granted	Taiwan	Damascene Capacitors For Integrated Circuits
89100158	NI-134826	2000-01-06	2001-10-17	Lapsed	Taiwan	Integrated Circuit Capacitor And Associated Fabrication Methods
87105577	NI-132141	1998-04-13	2001-05-16	Lapsed	Taiwan	Capacitor Comprising Improved Taox-Based Dielectric
90116133	I282168	2001-07-02	2007-06-01	Lapsed	Taiwan	Silicon-On-Insulator (SOI) Semiconductor Structure With Trench Including A Conductive Layer
093110409	I325175	2004-04-14	2010-05-21	Lapsed	Taiwan	Metal-Oxide-Semiconductor Device Including A Buried Lightly-Doped Drain Region
20000064498	675988	2000-11-01	2007-01-23	Lapsed	Korea, Republic of (KR)	Method For Making Field Effect Devices And Capacitors With Thin Film Dielectrics And Resulting Devices
1020010049568	809305	2001-08-17	2008-02-26	Lapsed	Korea, Republic of (KR)	Process For Fabricating A Semiconductor Device Having A Metal Oxide Or A Metal Silicate GateDielectric Layer
1020000001128	699186	2000-01-11	2007-03-19	Lapsed	Korea, Republic of (KR)	Method For Making An Integrated Circuit Including Alignment Marks
1019980018520	505305	1998-05-22	2005-07-25	Lapsed	Korea, Republic of (KR)	Capacitor Comprising Improved Taox-Based Dielectric
1019980050349	495717	1998-11-24	2005-06-08	Lapsed	Korea, Republic of (KR)	Method Of Manufacturing An Integrated Circuit Using Chemical Mechanical Polishing
19990024635	0303937	1999-06-28	2001-07-16	Lapsed	Korea, Republic of (KR)	System And Method Of Manufacturing Semicustom Reticles Using Reticle Primitives
9832710	280565	1998-08-12	2000-11-10	Granted	Korea, Republic of (KR)	A Device and Method of Forming A Metal To Metal Capacitor Within an Integrated Circuit

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
9723238	455640	1997-06-05	2004-10-26	Expired	Korea, Republic of (KR)	Method For Producing Tapered Lines
10335470	7014957	2002-12-31	2006-03-21	Granted	United States of America	Interconnect routing using parallel lines and method of manufacture
1020000016832	367185	2000-03-31	2002-12-23	Lapsed	Korea, Republic of (KR)	Lithographic Process For Device Fabrication Using Dark-Field Illumination
1020000035027	617894	2000-06-24	2006-08-23	Granted	Korea, Republic of (KR)	Semiconductor Device Free Of LDD Regions
1020010019270	707705	2001-04-11	2007-04-09	Lapsed	Korea, Republic of (KR)	Local Area Alloying For Preventing Dishing Of Copper During Chemical Mechannical Polishing (CMP)
1020000074125	753777	2000-12-07	2007-08-24	Lapsed	Korea, Republic of (KR)	Article Comprising A Dielectric Material Of Zr-Ge-Ti-O Or Hf-Ge-Ti-O And Method Of Making The Same
1020060012904	10-1184202	2006-02-10	2012-09-13	Lapsed	Korea, Republic of (KR)	High-Density Field Emission Elements and a Method for Forming Said Emission Elements
1020050085840	10-1215425	2005-09-14	2012-12-18	Granted	Korea, Republic of (KR)	Guard Ring for Improved Matching
1020020056476	10-918779	2002-09-17	2009-09-17	Lapsed	Korea, Republic of (KR)	Bipolar Junction Transistor Compatible With Vertical Replacement Gate Transistors
1020030034713	10-948495	2003-05-30	2010-03-12	Lapsed	Korea, Republic of (KR)	Overlay Metrology Using Scatterometry Profiling
1020020057533	10-908991	2002-09-23	2009-07-16	Lapsed	Korea, Republic of (KR)	Multiple Operating Voltage Vertical Replacement-Gate (VRG) Transistor
2001196104	4931291	2001-06-28	2012-02-24	Lapsed	Japan	Silicon-On-Insulator (SOI) Semiconductor Structure With Trench Including A Conductive Layer
2000135071	3492978	2000-05-08	2003-11-14	Granted	Japan	Improved Wehnelt Gun For Electron Lithography
11015686	3521119	1999-01-25	2004-02-13	Lapsed	Japan	Device And Method Of Fabricating Vias For ULSI Metallization And Interconnect
10227743	3321101	1998-08-12	2002-06-21	Granted	Japan	A Device and Method of Forming A Metal To Metal Capacitor Within an Integrated Circuit
2000233853	3782293	2000-08-02	2006-03-17	Lapsed	Japan	Methods And Apparatus For Testing Integrated Circuits
10313333	6897102	2002-12-06	2005-05-24	Granted	United States of America	Process to minimize polysilicon gate depletion and dopant penetration and to increase conductivity
2003180575	4386680	2003-06-25	2009-10-09	Lapsed	Japan	Capacitor For A Semiconductor Device And Method For Fabrication Therefor
2006035891	5153075	2006-02-14	2012-12-14	Lapsed	Japan	High-Density Field Emission Elements and a Method for Forming Said Emission Elements
2001168642	5239107	2001-06-04	2013-04-12	Lapsed	Japan	A Method For Reducing Dishing Related Issues During The Formation Of Shallow Trench Isolation Structures
2000372277	4358430	2000-12-07	2009-08-14	Lapsed	Japan	A Process for Fabricating Integrated Circuit Devices Having Thin Film Transistors
10245219	6855624	2002-09-17	2005-02-15	Lapsed	United States of America	Low-loss on-chip transmission line for integrated circuit structures and method of manufacture

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09704200	6537923	2000-10-31	2003-03-25	Granted	United States of America	Process for forming integrated circuit structure with low dielectric constant material between closely spaced apart metal lines
983065624	69835260.2	1998-08-18	2006-07-19	Lapsed	Germany (Federal Republic of)	Embedded Thin Film Passive Components
003071784	60000174.1	2000-08-21	2002-05-22	Lapsed	Germany (Federal Republic of)	Semiconductor Device Having Regions Of Insulating Material Formed In A Semiconductor Substrate And Process Of Making The Device
993071026	69902133.2	1999-09-07	2002-07-17	Lapsed	Germany (Federal Republic of)	Method Of Making An Article Comprising An Oxide Layer On A GaAs-Based Semiconductor Body
993064708	69901142.6	1999-08-17	2002-04-03	Granted	Germany (Federal Republic of)	Process For Semiconductor Device Fabrication Having Copper Interconnects
973090285	69724972.7	1997-11-11	2003-09-17	Granted	Germany (Federal Republic of)	Electronic Apparatus
10172849	6917430	2002-06-17	2005-07-12	Lapsed	United States of America	Method to improve the control of source chemicals delivery by a carrier gas
003032737	60032051.0	2000-04-18	2006-11-29	Lapsed	Germany (Federal Republic of)	A Method Of Forming A Multi-Layered Dual-Polysilicon Structure
10078233	6830984	2002-02-15	2004-12-14	Granted	United States of America	Thick traces from multiple damascene layers
10033090	6817941	2001-10-25	2004-11-16	Lapsed	United States of America	Uniform airflow diffuser
10008170	6706583	2001-10-19	2004-03-16	Granted	United States of America	High speed low noise transistor
10053537	6673498	2001-11-02	2004-01-06	Lapsed	United States of America	Method for reticle formation utilizing metal vaporization
09970392	6647348	2001-10-03	2003-11-11	Granted	United States of America	Latent defect classification system
11368780	7476951	2006-03-06	2009-01-13	Granted	United States of America	Selective Isotropic Etch For Titanium Based Materials
08935521	5895960	1997-09-23	1999-04-20	Expired	United States of America	Thin Oxide Mask Level Resistor
09999872	6582568	2001-10-19	2003-06-24	Granted	United States of America	First stage salicidation of cobalt during cobalt deposition or subsequent Ti or Tin cap deposition using energy from a directional plasma
983079187	69832352.1	1998-09-29	2005-11-16	Granted	Germany (Federal Republic of)	Energy-Sensitive Resist Material And A Process For Device Fabrication UsingAn Energy-Sensitive Resist Material
09758603	6741122	2001-01-12	2004-05-25	Granted	United States of America	Routing technique to adjust clock skew using frames and prongs
08924277	6102962	1997-09-05	2000-08-15	Expired	United States of America	Method for estimating quiescent current in integrated circuits
09574771	6506678	2000-05-19	2003-01-14	Granted	United States of America	Integrated circuit structures having low k porous aluminum oxide dielectric material separating aluminum lines, and method of making same
09817642	6476497	2001-03-26	2002-11-05	Granted	United States of America	Concentric metal density power routing
10271860	4094743	1998-09-25	2008-03-14	Lapsed	Japan	A Method and Apparatus for Chemical Mechanical Polishing
09292079	6211051	1999-04-14	2001-04-03	Granted	United States of America	Reduction of plasma damage at contact etch in MOS integrated circuits

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09213847	6177305	1998-12-17	2001-01-23	Granted	United States of America	Fabrication of metal-insulator-metal capacitive structures
87103907	133913	1998-03-17	2001-10-08	Lapsed	Taiwan	Tunable Dielectric Constant Oxide and Method of Manufacture
09112222	6074517	1998-07-08	2000-06-13	Granted	United States of America	Method and apparatus for detecting an endpoint polishing layer by transmitting infrared light signals through a semiconductor wafer
09909175	6970622	2001-07-19	2005-11-29	Lapsed	United States of America	Arrangement and method for controlling the transmission of a light signal based on intensity of a received light signal
08923676	5915414	1997-09-04	1999-06-29	Expired	United States of America	Standardized gas isolation box (GIB) installation
08651018	5966599	1996-05-21	1999-10-12	Expired	United States of America	Method for fabricating a low trigger voltage silicon controlled rectifier and thick field device
08623470	5861652	1996-03-28	1999-01-19	Expired	United States of America	Method and apparatus for protecting functions imbedded within an integrated circuit from reverse engineering
1019980033782	499194	1998-08-20	2005-06-24	Lapsed	Korea, Republic of (KR)	Process For Forming Integrated Circuit Structure With Improved Metal Silicide Contacts Using Notched Sidewall Spacer On Gate Electrode, And Resulting Structure
09703616	6391768	2000-10-30	2002-05-21	Granted	United States of America	Process for CMP removal of excess trench or via filler metal which inhibits formation of concave regions on oxide surface of integrated circuit structure
09948808	6727107	2001-09-07	2004-04-27	Granted	United States of America	Method of testing the processing of a semiconductor wafer on a CMP apparatus
10304974	6867488	2002-11-26	2005-03-15	Lapsed	United States of America	Thick metal top layer
09111271	6114215	1998-07-06	2000-09-05	Granted	United States of America	Generating non-planar topology on the surface of planar and near-planar substrates
09112403	6066266	1998-07-08	2000-05-23	Granted	United States of America	In-situ chemical-mechanical polishing slurry formulation for compensation of polish pad degradation
09928570	6743725	2001-08-13	2004-06-01	Granted	United States of America	High selectivity SiC etch in integrated circuit fabrication
08979734	5914001	1997-11-26	1999-06-22	Expired	United States of America	In-situ etch of CVD chamber
08979733		1997-11-26		Abandoned	United States of America	Gas Control Structure For Cvd Chamber
09072915	5992242	1998-05-04	1999-11-30	Granted	United States of America	Silicon wafer or die strength test fixture using high pressure fluic
09054279	5998226	1998-04-02	1999-12-07	Granted	United States of America	Method and system for alignment of openings in semiconductor fabrication
08995260	6066561	1997-12-19	2000-05-23	Granted	United States of America	Apparatus and method for electrical determination of delamination at one or more interfaces within a semiconductor wafer
08960925	5961375	1997-10-30	1999-10-05	Expired	United States of America	Shimming substrate holder assemblies to produce more uniformly polished substrate surfaces
08984003	5936876	1997-12-03	1999-08-10	Granted	United States of America	Semiconductor integrated circuit core probing for failure analysis
08966637	6028014	1997-11-10	2000-02-22	Granted	United States of America	Plasma-enhanced oxide process optimization and material and apparatus therefor
08895960	6004193	1997-07-17	1999-12-21	Expired	United States of America	Dual purpose retaining ring and polishing pad conditioner

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08926590	6020242	1997-09-04	2000-02-01	Expired	United States of America	Effective silicide blocking
08874055	5985679	1997-06-12	1999-11-16	Expired	United States of America	Automated endpoint detection system during chemical-mechanical polishing
08918483	5893756	1997-08-26	1999-04-13	Expired	United States of America	Use of ethylene glycol as a corrosion inhibitor during cleaning after metal chemical mechanical polishing
08963813	5973398	1997-11-04	1999-10-26	Granted	United States of America	Semiconductor device and fabrication method employing a palladium-plated heat spreader substrate
08786695	5869395	1997-01-22	1999-02-09	Expired	United States of America	Simplified hole interconnect process
08754696	5985746	1996-11-21	1999-11-16	Expired	United States of America	Process for forming self-aligned conductive plugs in multiple insulation levels in integrated circuit structures and resulting product
08596894	5760428	1996-01-25	1998-06-02	Expired	United States of America	Variable width low profile gate array input/output architecture
08520030	5614249	1995-08-28	1997-03-25	Expired	United States of America	Leak detection system for a gas manifold of a chemical vapor deposition apparatus
08486803	5698468	1995-06-07	1997-12-16	Expired	United States of America	Silicidation process with etch stop
08396560	5539246	1995-03-01	1996-07-23	Expired	United States of America	Microelectronic integrated circuit including hexagonal semiconductor gate device
08792479	5773855	1997-01-31	1998-06-30	Expired	United States of America	Microelectronic circuit including silicided field-effect transistor elements that bifunction as interconnects
10015255	6562735	2001-12-11	2003-05-13	Granted	United States of America	Control of reaction rate in formation of low k carbon-containing silicon oxide dielectric material using organosilane, unsubstituted silane, and hydrogen peroxide reactants
09848758	6503840	2001-05-02	2003-01-07	Granted	United States of America	Process for forming metal-filled openings in low dielectric constant dielectric material while inhibiting via poisoning
08627622	5654895	1996-04-04	1997-08-05	Expired	United States of America	Process monitor usig impedance controlled I/O controller
08512678	5663076	1995-08-08	1997-09-02	Expired	United States of America	Automating photolithography in the fabrication of integrated circuits
09808441	6492736	2001-03-14	2002-12-10	Granted	United States of America	Power mesh bridge
2013174500	5710714	2005-03-10	2015-03-13	Lapsed	Japan	A Bipolar Junction Transistor Having A High Germanium Concentration In A Silicon-Germanium Layer And A Method For Forming The Bipolar Junction Transistor
08283296	5474648	1994-07-29	1995-12-12	Expired	United States of America	Uniform and repeatable plasma processing
201184505		2011-04-06		Abandoned	Japan	Method And Structure For DC And RF Shielding Of Integrated Circuits
11534340	7535330	2006-09-22	2009-05-19	Granted	United States of America	LOW MUTUAL INDUCTANCE MATCHED INDUCTORS
2012105770		2012-05-07		Abandoned	Japan	Multiple Operating Voltage Vertical Replacement-Gate (VRG) Transistor

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
1020127015010	10-1216580	2012-06-11	2012-12-21	Granted	Korea, Republic of (KR)	A Bipolar Junction Transistor Having A High Germanium Concentration In A Silicon-Germanium Layer And A Method For Forming The Bipolar Junction Transistor
09730704	6413151	2000-12-06	2002-07-02	Granted	United States of America	CMP slurry recycling apparatus and method for recycling CMP slurry
2012100569		2012-04-26		Abandoned	Japan	An Integrated Circuit Including ESD Circuits For A Multi-Chip Module And A Method Therefor
08475586	5637887	1995-06-07	1997-06-10	Expired	United States of America	Silicon controller rectifier (SCR) with capacitive trigger
08650476	5780347	1996-05-20	1998-07-14	Expired	United States of America	Method of forming polysilicon local interconnects
057254047		2005-03-10		Abandoned	European Patent	A Bipolar Junction Transistor Having A High Germanium Concentration In A Silicon-Germanium Layer And A Method For Forming The Bipolar Junction Transistor
011016839	60133155.9	2001-01-30	2008-03-12	Granted	Germany (Federal Republic of)	Interconnect-Embedded Metal-Insulator-Metal Capacitor and Method of Fabricating Same
08685772	5689134	1996-07-24	1997-11-18	Expired	United States of America	Integrated circuit structure having reduced cross-talk and method of making same
131550428		2005-03-10		Abandoned	European Patent	A Bipolar Junction Transistor Having A High Germanium Concentration In A Silicon-Germanium Layer And A Method For Forming The Bipolar Junction Transistor
2009246032	5404308	2009-10-27	2013-11-08	Granted	Japan	Semiconductor Device Free Of LDD Regions
001226885		2000-10-18		Lapsed	European Patent	Low Dielectric Constant Silicon Oxide-Based Dielectric Layer for Integrated Circuit Structures Having Improved Compatibility with Via Filler Materials, and Method of Making Same
09892250	6559033	2001-06-27	2003-05-06	Granted	United States of America	Processing for forming integrated circuit structure with low dielectric constant material between closely spaced apart metal lines
2009143777	4505036	2009-06-17	2010-04-30	Lapsed	Japan	A Process for Fabricating Integrated Circuit Devices Having Thin Film Transistors
09148028	6340434	1998-09-03	2002-01-22	Granted	United States of America	Method and apparatus for chemical-mechanical polishing
11140142	7106073	2005-05-27	2006-09-12	Lapsed	United States of America	Method and system for area efficient charge-based capacitance measurement
11323405	7429733	2005-12-29	2008-09-30	Granted	United States of America	Method and sample for radiation microscopy including a particle beam channel formed in the sample source
09881151	6914786	2001-06-14	2005-07-05	Lapsed	United States of America	Converter device
10035346	6825546	2001-12-28	2004-11-30	Lapsed	United States of America	CMOS varactor with constant dC/dV characteristic
10966074	7179736	2004-10-14	2007-02-20	Granted	United States of America	Method for fabricating planar semiconductor wafers
11005765	7242074	2004-12-06	2007-07-10	Granted	United States of America	Reduced capacitance resistors
11247517	7284213	2005-10-11	2007-10-16	Granted	United States of America	Defect analysis using a yield vehicle

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
11397252	8053824	2006-04-03	2011-11-08	Granted	United States of America	Interdigitated Mesh To Provide Distributed, HIgh Quality Factor Capacitive Coupling
10927802	7137098	2004-08-27	2006-11-14	Granted	United States of America	Pattern component analysis and manipulation
60002275		1995-08-14		Expired	United States of America	A Process For Semiconductor Device Fabrication
60426842		2002-11-15		Expired	United States of America	In-Situ Removal Of Surface Impurities Prior To As Doped Poly Dep
60552308		2004-03-10		Expired	United States of America	Creation of A High Ge Concentration SiGe Layer In BiCMOS Processing Through Thermal Oxidation of the SiGe Base Layer
60541878		2004-02-04		Expired	United States of America	Structure For Improved Heat Conduction For Semiconductor Devices
60115717		1999-01-12		Expired	United States of America	Method Of Making A Graded Grown, High Quality Oxide Layer For A Semiconductor Device
60117242		1999-01-26		Expired	United States of America	Device Comprising Thermally Stable, Low Dielectric Constant Material
10971961	7259083	2004-10-22	2007-08-21	Granted	United States of America	Local interconnect manufacturing process
60115532		1999-01-12		Expired	United States of America	Novel Methods To Fabricate MOM Capacitors
10117487	6878406	2002-04-05	2005-04-12	Lapsed	United States of America	Dynamic use of process temperature
062546304		2006-09-06		Lapsed	European Patent	Robust Shallow Trench Isolation Structures And A Method For Forming Shallow Trench Isolation Structures
60180809		2000-02-07		Expired	United States of America	Improvement Of Thick Photoresist (PR) Integrity For High-Current High-Dose High-Energy Ion Implantation Using A Novel Thermal And UV-Irradiation Treatment
60174566		2000-01-05		Expired	United States of America	An Integrated Circuit And A Method Of Making An Integrated Circuit
10867014	7013192	2004-06-14	2006-03-14	Lapsed	United States of America	Substrate contact analysis
11269275	8076779	2005-11-08	2011-12-13	Granted	United States of America	Reduction of macro level stresses in copper/Low-K wafers
09464297	6759337	1999-12-15	2004-07-06	Granted	United States of America	Process for etching a controllable thickness of oxide on an integrated circuit structure on a semiconductor substrate using nitrogen plasma and plasma and an rf bias applied to the substrate
09972481	6667536	2001-10-05	2003-12-23	Lapsed	United States of America	Thin Film Multi-Layer High Q Transformer Formed In A Semiconductor Substrate
60140666		1999-06-24		Expired	United States of America	Method Of Making A Graded, High Quality Oxide Layer For A Semiconductor Device
60096581		1998-08-14		Expired	United States of America	Process For Fabricating Device Comprising Lead Zirconate Titanate
09271084	6531751	1999-03-17	2003-03-11	Granted	United States of America	Semiconductor Device With Increased Gate Insulator Lifetime
60141656		1999-06-30		Expired	United States of America	Impact Of Post Window Etch Cleans Process On Reliability Of 0.25 (*mm Vintage Windows

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09345039	6368972	1999-06-30	2002-04-09	Granted	United States of America	Method For Making An Integrated Circuit Including Alignment Marks
09376233	6274933	1999-08-17	2001-08-14	Granted	United States of America	An Integrated Circuit Device Having A Planar Interlevel Dielectric Layer
60507335		2003-09-30		Expired	United States of America	A Spiral Inductor Formed In A Semiconductor Substrate
60005141		1995-10-12		Expired	United States of America	A Process For Device Fabrication In Which The Plasma Etch Is Controlled By Monitoring Optical Emission
09345556	6265260	1999-06-30	2001-07-24	Granted	United States of America	Method For Making An Integrated Circuit Capacitor Including Tantalum Pentoxide
09235735	6248394	1999-01-22	2001-06-19	Granted	United States of America	Process For Fabricating Device Comprising Lead Zirconate Titanate
08714909	5835221	1996-09-17	1998-11-10	Expired	United States of America	Process For Fabricating A Device Using Polarized Light To Determine Film Thickness
09113594	6372520	1998-07-10	2002-04-16	Granted	United States of America	Sonic assisted strengthening of gate oxides
60115527		1999-01-12		Expired	United States of America	Technique To Fabricate Gate Mask Photo Alignment Marks For STI
10701328	6939727	2003-11-03	2005-09-06	Lapsed	United States of America	Method for performing statistical post processing in semiconductor manufacturing using ID cells
60326050		2001-09-28		Expired	United States of America	A Resistor Located On A Semiconductor Substrate And A Method of Manufacture Therefor
10928292	7062415	2004-08-27	2006-06-13	Lapsed	United States of America	Parametric outlier detection
10020084	6686272	2001-12-13	2004-02-03	Granted	United States of America	Anti-reflective coatings for use at 248 nm and 193 nm
10799851	7299158	2004-03-12	2007-11-20	Granted	United States of America	Process control data collection
60145127		1999-07-22		Expired	United States of America	Article Comprising Aligned Carbon Nanotubes With Reduced Diameter And Method For Making The Same
2007503058	5393027	2005-03-10	2013-10-25	Granted	Japan	A Bipolar Junction Transistor Having A High Germanium Concentration In A Silicon-Germanium Layer And A Method For Forming The Bipolar Junction Transistor
60149036		1999-08-16		Expired	United States of America	Electrochemical Abatement Of Perfluorinated Compounds
60013093		1996-03-08		Expired	United States of America	An Energy-Sensitive Resist Material And A Process For Device Fabrication Using An Energy-Sensitive Resist Material
09369802	6538367	1999-08-06	2003-03-25	Granted	United States of America	Field Emitting Device Comprising Field-Concentrating Nanoconductor Assembly And Method For Making The Same
60135565		1999-05-24		Expired	United States of America	Use Of Titanium-Tantalum Alloy As A Diffusion Barrier Material For CopperInterconnects
60115881		1999-01-14		Expired	United States of America	A 3-Step Passivation-Depassivation-Passivation D 2 Annealing Process For Hot Carrier Immunity And Transistor Matching
60007002		1995-10-16		Expired	United States of America	A Process For Fabricating A Device Using Polarized Light To Determine Film Thickness
09131860	6136672	1998-08-10	2000-10-24	Granted	United States of America	Process For Device Fabrication Using A High-Energy Boron Implant

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
10779966	6971944	2004-02-17	2005-12-06	Lapsed	United States of America	Method and control system for improving CMP process by detecting and reacting to harmonic oscillation
60060869		1997-10-02		Expired	United States of America	An Energy-Sensitive Resist Material And A Process For Device Fabrication Using An Energy-Sensitive Resist Material
10668875	7071811	2003-09-23	2006-07-04	Lapsed	United States of America	High performance voltage control diffusion resistor
09480224	6359339	2000-01-10	2002-03-19	Granted	United States of America	Multi-Layered Metal Silicide Resistor For Si IC's
10505197	7972440	2005-06-10	2011-07-05	Granted	United States of America	Monitoring And Control Of A Fabrication Process
60172654		1999-12-20		Expired	United States of America	X-Ray System
60082076		1998-04-17		Expired	United States of America	Process For Device Fabrication Using A High-Energy Boron Implant
60294566		2001-06-01		Expired	United States of America	Process For Controlling Alignment In A Lithographic Process And Apparatus Therefor
10713951	7166492	2003-11-14	2007-01-23	Granted	United States of America	Integrated circuit carrier apparatus method and system
10513121	7132297	2004-10-27	2006-11-07	Granted	United States of America	Multi-Layer Inductor Formed In A Semiconductor Substrate And Having A Core Of Ferromagnetic Material
1020067018437	10-1173526	2005-03-10	2012-08-07	Granted	Korea, Republic of (KR)	A Bipolar Junction Transistor Having A High Germanium Concentration In A Silicon-Germanium Layer And A Method For Forming The Bipolar Junction Transistor
09594189	6365503	2000-06-14	2002-04-02	Granted	United States of America	A Method Of Inmproving Electromigration In Semiconductor Device Manufacturing Processes
09879783	6765806	2001-06-12	2004-07-20	Granted	United States of America	Composition with EMC shielding characteristics
09296001	6469390	1999-04-21	2002-10-22	Granted	United States of America	Device Comprising Thermally Stable, Low Dielectric Constant Material
10690861	6909591	2003-10-22	2005-06-21	Lapsed	United States of America	Complimentary metal oxide semiconductor capacitor and method for making same
10721971	6998343	2003-11-24	2006-02-14	Lapsed	United States of America	Method for creating barrier layers for copper diffusion
09611844	6503841	2000-07-07	2003-01-07	Granted	United States of America	Oxide Etch
08703756	5877032	1996-08-27	1999-03-02	Expired	United States of America	A Process For Device Fabrication In Which The Plasma Etch Is Controlled By Monitoring Optical Emission
09472332	6290822	1999-12-23	2001-09-18	Granted	United States of America	Sputtering Method For Forming Dielectric Films
09641160	6479404	2000-08-17	2002-11-12	Granted	United States of America	Process For Fabricating A Semiconductor Device Having A Metal Oxide Or A Metal Silicate Gate Dielectric Layer
10156242	6708574	2002-05-24	2004-03-23	Granted	United States of America	Abnormal Photoresist Line\(slSpace Profile Detection Through Signal Processing Of Metrology Waveform
09510015	6361614	2000-02-22	2002-03-26	Granted	United States of America	Method And Apparatus For Dark Spin Rinse/Dry Semiconductor Processing
09514832	6439968	2000-02-28	2002-08-27	Granted	United States of America	A Polishing Pad Having A Water-Repellant Film Thereon And A Method Of Manufacture Therefor
09650604	7439146	2000-08-30	2008-10-21	Granted	United States of America	Field Plated Resistor With Enhanced Routing Area Thereover

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09483297	6465132	2000-01-14	2002-10-15	Granted	United States of America	Article Comprising Small Diameter Nanowires And Method For Making The Same
09378856	6187665	1999-08-23	2001-02-13	Granted	United States of America	A process For Deuterium Passivation And Hot Carrier Immunity
10675575	7556048	2003-09-30	2009-07-07	Lapsed	United States of America	In-Situ Removal Of Surface Impurities Prior TO Arsenic-Doped Polysilicon In The Fabrication Of Heterojuntion Biloplar Transistor
09426453	6297063	1999-10-25	2001-10-02	Granted	United States of America	In-Situ Nano-Interconnected Circuit Devices And Method For Making The Same
09364367	6153901	1999-07-30	2000-11-28	Granted	United States of America	Integrated Circuit Capacitor Including Anchored Plug
09366388	6560735	1999-08-03	2003-05-06	Granted	United States of America	Methods And Apparatus For Testing Integrated Circuits
10650395	7067882	2003-08-28	2006-06-27	Lapsed	United States of America	High quality factor spiral inductor that utilizes active negative capacitance
09521768	6319095	2000-03-09	2001-11-20	Granted	United States of America	Colloidal Suspension Of Abrasive Particles Containing Magnesium As CMP Slurry
09451053	6576980	1999-11-30	2003-06-10	Granted	United States of America	Surface Treatment Anneal Of Hydrogenated Silicon-Oxy-Carbide Dielectric Layer
09334977	6417570	1999-06-17	2002-07-09	Granted	United States of America	Layered Dielectric Film Structure Suitable For Gate Dielectric Application In Sub\(mi0.25 ìm Technologies
09140275	6080625	1998-08-26	2000-06-27	Granted	United States of America	Method For Making Dual-Polysilicon Structures In Integrated Circuits
10723701	7183787	2003-11-26	2007-02-27	Granted	United States of America	Contact resistance device for improved process control
2003572051	4737933	2003-02-24	2011-05-13	Lapsed	Japan	Monitoring And Control Of A Fabrication Process
09653297	6548892	2000-08-31	2003-04-15	Granted	United States of America	Low K Dielectric Insulator and Method of Forming Semiconductor Circuit Structures
10026407	6730588	2001-12-20	2004-05-04	Granted	United States of America	Method of forming SiGe gate electrode
09759120	6509242	2001-01-12	2003-01-21	Granted	United States of America	Heterojunction Bipolar Transistor
10736386	7653523	2003-12-15	2010-01-26	Lapsed	United States of America	Method For Calculating High-Resolution Wafer Parameter Profiles
09121284	6013958	1998-07-23	2000-01-11	Granted	United States of America	Apparatus and Method for Integrated Circuit With Variable Capacitor
10730554	6984869	2003-12-08	2006-01-10	Lapsed	United States of America	High performance diode implanted voltage controlled p-type diffusion resistor
09232418	6111750	1999-01-15	2000-08-29	Granted	United States of America	Electronic Apparatus
09236933	6283812	1999-01-25	2001-09-04	Granted	United States of America	Article Comprising Aligned, Truncated Carbon Nanotubes And Process For Fabricating Article
09277778	6218255	1999-03-29	2001-04-17	Granted	United States of America	Method Of Making A Capacitor
09911364	6844236	2001-07-23	2005-01-18	Granted	United States of America	Method And Structure For DC And RF Shielding Of Integrated Circuits
10644116	7245758	2003-08-20	2007-07-17	Granted	United States of America	Whole-wafer photoemission analysis
09311631	6358865	1999-05-14	2002-03-19	Granted	United States of America	Oxidation Of Silicon Using Fluorine Implant

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09363758	6153268	1999-07-29	2000-11-28	Granted	United States of America	Method For Producing Oriented Piezoelectric Films
09388297	6350659	1999-09-01	2002-02-26	Granted	United States of America	Semiconductor Device Having Regions Of Insulating Material Formed In A Semiconductor Substrate And Process Of Making The Device
09140270	6348393	1998-08-26	2002-02-19	Granted	United States of America	A Capacitor In An Integrated Circuit And A Method Of Manufacturing An Integrated Circuit
09153522	6103607	1998-09-15	2000-08-15	Granted	United States of America	Manufacture Of Mosfet Devices
10261463	6940151	2002-09-30	2005-09-06	Granted	United States of America	Silicon-Rich Low Thermal Budget Silicon Nitride For Integrated Circuits
10260693	6784478	2002-09-30	2004-08-31	Granted	United States of America	Plate Capacitor Structure And Fabrication Method Therefor In A Dual Damascene Process
09236966	6250984	1999-01-25	2001-06-26	Granted	United States of America	Article Comprising Enhanced Nanotube Emitter Structure And Process For Fabricating Article
09108848	6284413	1998-07-01	2001-09-04	Granted	United States of America	System and Method of Manufacturing Semicustom Reticles Using Reticle Primitives
10153231	6686662	2002-05-21	2004-02-03	Granted	United States of America	A Semiconductor Device Barrier Layer
09283528	6379868	1999-04-01	2002-04-30	Granted	United States of America	Lithographic Process For Device Fabrication Using Dark-Field Illumination
10953750	7067890	2004-09-29	2006-06-27	Lapsed	United States of America	Thick Oxide Region In A Semiconductor Device
09082924	6192290	1998-05-21	2001-02-20	Granted	United States of America	System And Method Of Manufacturing Semicustom Integrated Circuits Using Reticle Primitives From A Library And Interconnect Reticles
09456210	6197663	1999-12-07	2001-03-06	Granted	United States of America	A Process For Fabricating Integrated Circuit Devices Having Thin Film Transistors
09226730	6107684	1999-01-07	2000-08-22	Granted	United States of America	Semiconductor Device Having a Signal Pin with Multiple Connections
08847704	6023093	1997-04-28	2000-02-08	Expired	United States of America	Deuterated Dielectric And Polysilicon Film-Based Semiconductor Devices And Method Of Manufacture Thereof
09080430	6002113	1998-05-18	1999-12-14	Granted	United States of America	Apparatus For Processing Silicon Device With Improved Temperature Control
10658017	6865435	2003-09-08	2005-03-08	Lapsed	United States of America	Method of translating a net description of an integrated circuit die
09152189	6101371	1998-09-12	2000-08-08	Granted	United States of America	Article Comprising An Inductor
08568040	5589416	1995-12-06	1996-12-31	Expired	United States of America	Process For Forming Integrated Capacitors
08555594	5648699	1995-11-09	1997-07-15	Expired	United States of America	Field Emission Devices Employing Improved Emitters On Metal Foil And Methods For Making Such Devices
09999848	6734081	2001-10-24	2004-05-11	Granted	United States of America	Shallow trench isolation structure for laser thermal processing
10668021	7081037	2003-09-22	2006-07-25	Lapsed	United States of America	Pad conditioner setup
10719195	6890804	2003-11-21	2005-05-10	Granted	United States of America	Metal-Oxide-Semiconductor Device Formed in Silicon-On-Insulator

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08957122	6556703	1997-10-24	2003-04-29	Expired	United States of America	Scanning Electron Microscope System And Method Of Manufacturing An Integrated Circuit
08538317	5552355	1995-10-03	1996-09-03	Expired	United States of America	Compensation Of The Temperature Coefficient Of The Dielectric Constant Of Barium Strontium Titanate
09280387	6323537	1999-03-29	2001-11-27	Granted	United States of America	A Capacitor For An Integrated Circuit
10675569	7137400	2003-09-30	2006-11-21	Granted	United States of America	Bypass Loop Gas Flow Calibration
10151887	6797525	2002-05-22	2004-09-28	Granted	United States of America	Fabrication Process For A Semiconductor Device Having A Metal Oxide Dielectric Material With A High Dielectric Constant, Annealed With A Buffered Anneal Process
09742855	6625250	2000-12-19	2003-09-23	Granted	United States of America	Optical Structures And Methods For X-Ray Applications
08534356	5642014	1995-09-27	1997-06-24	Expired	United States of America	Self-Powered Devices
09310701	6492647	1999-05-07	2002-12-10	Granted	United States of America	Improved Wehnelt Gun For Electron Lithography
08509930	5739562	1995-08-01	1998-04-14	Expired	United States of America	Combined Photogate And Photodiode Active Pixel Image Sensor
10180910	6847077	2002-06-25	2005-01-25	Granted	United States of America	Capacitor For A Semiconductor Device And Method For Fabrication Therefor
10767205	7037820	2004-01-30	2006-05-02	Granted	United States of America	Cross-Fill Pattern For Metal Fill Levels, Power-Supply Filtering, And Analog Circuit Shielding
09409115	6322934	1999-09-30	2001-11-27	Granted	United States of America	Method For Making Integrated Circuits Including Features With A Relatively Small Critical Dimension
10629496	6818516	2003-07-29	2004-11-16	Lapsed	United States of America	Selective high k dielectrics removal
09364366	6204186	1999-07-30	2001-03-20	Granted	United States of America	Method Of Making Integrated Circuit Capacitor Including Tapered Plug
08380774	5598056	1995-01-31	1997-01-28	Expired	United States of America	Multilayer Pillar Structure For Improved Field Emission Devices
08903974	6566224	1997-07-31	2003-05-20	Expired	United States of America	Process For Device Fabrication
08355787	5670376	1994-12-14	1997-09-23	Expired	United States of America	Methodology For Monitoring Solvent Quality
09178720	6218077	1998-10-26	2001-04-17	Granted	United States of America	Method Of Manufacturing An Integrated Circuit Using A Scanning System And A Scanning System
09209787	6339246	1998-12-11	2002-01-15	Granted	United States of America	Tungsten Silicide Nitride As An Electrode For Tantalum Pentoxide Devices
08431355	5620573	1995-04-28	1997-04-15	Expired	United States of America	Reduced Stress Tungsten Deposition
08581665	5681763	1995-12-29	1997-10-28	Expired	United States of America	Method For Making Bipolar Transistors Having Indium Doped Base
09430147	6294465	1999-10-29	2001-09-25	Granted	United States of America	Method For Making Integrated Circuits Having Features With Reduced Critical Dimensions
08350439	5545916	1994-12-06	1996-08-13	Expired	United States of America	High Q, Integrated Inductors
09388166	6436187	1999-09-01	2002-08-20	Granted	United States of America	Process For Fabricating Article Having Substantial Three-Dimensional Order
08751472	5736749	1996-11-19	1998-04-07	Expired	United States of America	Integrated Circuit Device With Inductor Incorporated Therein
09878820	6875702	2001-06-11	2005-04-05	Lapsed	United States of America	Plasma treatment system

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08948874	5912498	1997-10-10	1999-06-15	Expired	United States of America	Article Comprising An Oxide Layer On GaN
09094920	6200734	1998-06-15	2001-03-13	Granted	United States of America	METHOD FOR FABRICATING SEMICONDUCTOR DEVICES
08344318	5656510	1994-11-22	1997-08-12	Expired	United States of America	Method For Manufacturing Gate Oxide Capacitors Including Wafer Backside Dielectric And Implantation Electron Flood
08775490	6017787	1996-12-31	2000-01-25	Expired	United States of America	Integrated Circuit With Twin Tub
08935121	5981319	1997-09-22	1999-11-09	Expired	United States of America	Method Of Forming A T-Shaped Gate
08393494	5659181	1995-03-02	1997-08-19	Expired	United States of America	Article Comprising alpha-Hexathienyl
09151077	6150271	1998-09-10	2000-11-21	Granted	United States of America	Differential Temperature Control In Chemical Mechanical Polishing Processes
08373732	5631462	1995-01-17	1997-05-20	Expired	United States of America	Laser-Assisted Particle Analysis
09420157	6741019	1999-10-18	2004-05-25	Granted	United States of America	Article Comprising Aligned
08879926	6141050	1997-06-20	2000-10-31	Expired	United States of America	MOS Image Sensor
08366952	5589303	1994-12-30	1996-12-31	Expired	United States of America	Self-Aligned Opaque Regions For Attenuating Phase-Shifting Masks
08366529	5489552	1994-12-30	1996-02-06	Expired	United States of America	Multiple Layer Tungsten Deposition Process
08286606	5472562	1994-08-05	1995-12-05	Expired	United States of America	Method Of Etching Silicon Nitride
08982109	5967885	1997-12-01	1999-10-19	Granted	United States of America	Method Of Manufacturing An Integrated Circuit Using Chemical Mechanical Polishing
08862907	5977582	1997-05-23	1999-11-02	Expired	United States of America	Capacitor Comprising Improved Taox-Based Dielectric
08332179	5623180	1994-10-31	1997-04-22	Expired	United States of America	Electron field emitters comprising particles cooled with low voltage emitting material
10455489	7429749	2003-06-04	2008-09-30	Granted	United States of America	Strained-silicon for CMOS device using amorphous silicon deposition or silicon epitaxial growth
08366515	5532510	1994-12-30	1996-07-02	Expired	United States of America	Reverse Side Etching for Producing Layers with Strain Variation
08570429	5821147	1995-12-11	1998-10-13	Expired	United States of America	Integrated Circuit Fabrication
08587426	5625199	1996-01-16	1997-04-29	Expired	United States of America	Article Comprising Complementary Circuit with Inorganic N-Channel and Organic P-Channel
08749719	6491732	1996-11-15	2002-12-10	Expired	United States of America	Wafer Handling Apparatus and Method
08381262	5561340	1995-01-31	1996-10-01	Expired	United States of America	Field Emission Display Having Corrugated Support Pillars and Method for Manufacturing
08932005	5903493	1997-09-17	1999-05-11	Expired	United States of America	Metal To Metal Capacitor Apparatus And Method For Making
10421421	7442113	2003-04-23	2008-10-28	Lapsed	United States of America	Visual wear confirmation polishing pad
09586384	6500729	2000-06-02	2002-12-31	Granted	United States of America	A Method For Reducing Dishing Related Issues During The Formation Of Shallow Trench Isolation Structures
09611907	6538283	2000-07-07	2003-03-25	Granted	United States of America	Silicon-On-Insulator (SOI) Semiconductor Structure With Trench Including A Conductive Layer
09546037	6620720	2000-04-10	2003-09-16	Granted	United States of America	Interconnections To Copper IC's
09499411	6404027	2000-02-07	2002-06-11	Granted	United States of America	High Dielectric Constant Gate Oxides For Silicon-Based Devices

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
10631528	6794304	2003-07-31	2004-09-21	Granted	United States of America	Method and apparatus for reducing microtrenching for borderless vias created in a dual damascene process
09416336	6187647	1999-10-12	2001-02-13	Granted	United States of America	Method Of Manufacturing Lateral High-Q Inductor For Semiconductor Devices
09456807	6437392	1999-12-08	2002-08-20	Granted	United States of America	Article Comprising A Dielectric Material Of Zr-Ge-Ti-O Or Hf-Ge-Ti-O And Method Of Making The Same
09454909	6329281	1999-12-03	2001-12-11	Granted	United States of America	Methods For Fabricating A Multilevel Interconnection For An Integrated Circuit Device Utilizing A Selective Overlayer
10693078	6894524	2003-10-23	2005-05-17	Granted	United States of America	Daisy chain gang testing
89125762	NI-151729	2000-12-04	2002-03-11	Lapsed	Taiwan	A Process For Fabricating Integrated Circuit Devices Having Thin Film Transistors
92114785	I279888	2003-05-30	2007-04-21	Lapsed	Taiwan	Capacitor For A Semiconductor Device And Method For Fabrication Therefor
89108684	NI-159798	2000-07-15	2002-08-01	Lapsed	Taiwan	Improved Wehnelt Gun For Electron Lithography
91118815	NI-190012	2002-08-20	2004-03-04	Granted	Taiwan	A Semiconductor Device Barrier Layer
10698167	6930362	2003-10-30	2005-08-16	Lapsed	United States of America	Calcium doped polysilicon gate electrodes
89112388	NI-204341	2000-06-29	2004-06-21	Granted	Taiwan	Semiconductor Device Free Of LDD Regions
89106001	NI-145942	2000-03-31	2001-12-11	Granted	Taiwan	Apparatus And Method For Continuous Delivery And Conditioning Of A Polishing Slurry
90108664	NI-166224	2001-04-11	2003-03-18	Lapsed	Taiwan	Local Area Alloying For Preventing Dishing Of Copper During Chemical Mechannical Polishing (CMP)
090121356	NI-189135	2001-08-29	2003-11-01	Lapsed	Taiwan	Field Plated Resistor With Enhanced Routing Area Thereover
90121457	NI-180535	2001-08-30	2003-07-01	Lapsed	Taiwan	Low K Dielectric Insulator and Method of Forming Semiconductor Circuit Structures
091100151	NI-193273	2002-01-08	2004-01-01	Granted	Taiwan	Heterojunction Bipolar Transistor
92108572	I300584	2003-04-14	2008-09-01	Lapsed	Taiwan	Overlay Metrology Using Scatterometry Profiling
89100425	NI-138500	2000-02-16	2001-12-05	Lapsed	Taiwan	Method For Making An Integrated Circuit Including Alignment Marks
10368520	6959258	2003-02-18	2005-10-25	Lapsed	United States of America	Methods and structure for IC temperature self-monitoring
093116604	I319598	2004-06-09	2010-01-11	Lapsed	Taiwan	Metal-Oxide-Semiconductor Device Formed in Silicon-On-Insulator
92126350	I315909	2003-09-24	2009-10-11	Granted	Taiwan	Silicon-Rich Low Thermal Budget Silicon Nitride For Integrated Circuits
92125649	I273702	2003-09-17	2007-02-11	Lapsed	Taiwan	Plate Capacitor Structure And Fabrication Method Therefor In A Dual Damascene Process
88104885	NI-138873	1999-03-29	2001-08-21	Granted	Taiwan	Method Of Eliminating Agglomerate Particles In A Polishing Slurry
88105177	NI-122696	1999-04-01	2000-11-01	Lapsed	Taiwan	Apparatus For Processing Silicon Device With Improved Temperature Control
89115497	NI-152144	2000-11-13	2002-03-21	Lapsed	Taiwan	Methods And Apparatus For Testing Integrated Circuits

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
89107369	NI-148715	2000-04-19	2002-01-11	Lapsed	Taiwan	A Method Of Forming A Multi-Layered Dual-Polysilicon Structure
093113007	I325158	2004-05-07	2010-05-21	Lapsed	Taiwan	Split-Gate Metal-Oxide-Semiconductor Device
1020010053350	10-861665	2001-08-31	2008-09-29	Lapsed	Korea, Republic of (KR)	An Integrated Circuit Including ESD Circuits For A Multi-Chip Module And A Method Therefor
1020010052999	10-870256	2001-08-30	2008-11-19	Granted	Korea, Republic of (KR)	Field Plated Resistor With Enhanced Routing Area Thereover
93129464	I362098	2004-09-29	2012-04-11	Lapsed	Taiwan	Inductor Formed In An Integrated Circuit
1020010053414	853360	2001-08-31	2008-08-14	Lapsed	Korea, Republic of (KR)	Low K Dielectric Insulator and Method of Forming Semiconductor Circuit Structures
1020000024335	850034	2000-05-08	2008-07-29	Lapsed	Korea, Republic of (KR)	Improved Wehnelt Gun For Electron Lithography
1019990035378	711526	1999-08-25	2007-04-19	Lapsed	Korea, Republic of (KR)	Process For Semiconductor Device Fabrication Having Copper Interconnects
1020000025275	695028	2000-05-12	2007-03-08	Lapsed	Korea, Republic of (KR)	Damascene Capacitors For Integrated Circuits
19990017990	335703	1999-05-19	2002-04-24	Lapsed	Korea, Republic of (KR)	Method Of Eliminating Agglomerate Particles In A Polishing Slurry
1020000033163	392278	2000-06-16	2003-07-09	Lapsed	Korea, Republic of (KR)	Process For Fabricating Vertical Transistors
1019990003869	0324072	1999-02-05	2002-01-29	Granted	Korea, Republic of (KR)	Electronic Apparatus
9842256	516252	1998-10-09	2005-09-06	Lapsed	Korea, Republic of (KR)	Article Comprising An Oxide Layer On GaN
20000073674	0437743	2000-12-06	2004-06-17	Lapsed	Korea, Republic of (KR)	A Method Of Forming An Alignment Feature In Or On A Multi-Layered Semiconductor Structure
10358968	6986972	2003-02-04	2006-01-17	Lapsed	United States of America	Alternating aperture phase-shift mask fabrication method
20000051024	456705	2000-08-31	2004-11-02	Granted	Korea, Republic of (KR)	Semiconductor Device Having Regions Of Insulating Material Formed In A Semiconductor Substrate And Process Of Making The Device
1019990046565	598471	1999-10-26	2006-07-03	Lapsed	Korea, Republic of (KR)	Method Of Manufacturing An Integrated Circuit Using A Scanning System And A Scanning System
1020000046601	421757	2000-08-11	2004-02-25	Lapsed	Korea, Republic of (KR)	Electrochemical Abatement Of Perfluorinated Compounds
1019990035568	705308	1999-08-26	2007-04-03	Lapsed	Korea, Republic of (KR)	Method For Making Dual-Polysilicon Structures In Integrated Circuits
1019990058177	716436	1999-12-16	2007-05-03	Granted	Korea, Republic of (KR)	Deep Sub-Micron Metal Etch With In-Situ Hard Mask Etch
1019990002654	307421	1999-01-28	2001-08-21	Lapsed	Korea, Republic of (KR)	Device And Method Of Fabricating Vias For ULSI Metallization And Interconnect
9840192	298970	1998-09-28	2001-06-05	Lapsed	Korea, Republic of (KR)	Silicon IC Contacts Using Composite TiN Barrier Layer
9781732	554648	1997-12-31	2006-02-16	Lapsed	Korea, Republic of (KR)	Integrated Circuit With Twin Tub
20000044542	687979	2000-08-01	2007-02-21	Lapsed	Korea, Republic of (KR)	Methods And Apparatus For Testing Integrated Circuits
1020040078024	10-1045195	2004-09-30	2011-06-23	Granted	Korea, Republic of (KR)	Inductor Formed In An Integrated Circuit
20050090978	10-1206628	2005-09-29	2012-11-23	Granted	Korea, Republic of (KR)	Thick Oxide Region In A Semiconductor Device
2001112078	4548759	2001-04-11	2010-07-16	Lapsed	Japan	Local Area Alloying For Preventing Dishing Of Copper During Chemical Mechannical Polishing (CMP)

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
2000373648	5208335	2000-12-08	2013-03-01	Lapsed	Japan	Article Comprising A Dielectric Material Of Zr-Ge-Ti-O Or Hf-Ge-Ti-O And Method Of Making The Same
10392206	6897673	2003-03-19	2005-05-24	Granted	United States of America	Method and integrated circuit for capacitor measurement with digital readout
11353614	4347479	1999-12-13	2009-07-24	Lapsed	Japan	Tungsten Silicide Nitride As An Electrode For Tantalum Pentoxide Devices
1020030033218	10-1003958	2003-05-24	2010-12-20	Granted	Korea, Republic of (KR)	Abnormal Photoresist Line/Space Profile Detection Through Signal Processing of Metrology Waveform
11263647	3725742	1999-09-17	2005-09-30	Lapsed	Japan	Method Of Making An Article Comprising An Oxide Layer On A GaAs-Based Semiconductor Body
2000152242	3445557	2000-05-24	2003-06-27	Granted	Japan	Titanium-Tantalum Barrier Layer Film And Method For Forming The Same
2000003096	3581285	2000-01-12	2004-07-30	Lapsed	Japan	Method For Making An Integrated Circuit Including Alignment Marks
90120871	NI-179943	2001-08-24	2003-06-21	Lapsed	Taiwan	An Integrated Circuit Including ESD Circuits For A Multi-Chip Module And A Method Therefor
89125642	NI-165332	2000-12-01	2002-10-01	Lapsed	Taiwan	A Method Of Forming An Alignment Feature In Or On A Multi-Layered Semiconductor Structure
92108571	I279872	2003-04-14	2007-04-21	Lapsed	Taiwan	Abnormal Photoresist Line/Space Profile Detection Through Signal Processing of Metrology Waveform
89100157	NI-144336	2000-01-06	2002-03-06	Lapsed	Taiwan	Method For Making An Integrated Circuit Capacitor Including Tantalum Pentoxide
10287056	3023090	1998-10-08	2000-01-14	Lapsed	Japan	Article Comprising An Oxide Layer On GaN
11135599	3550315	1999-05-17	2004-04-30	Lapsed	Japan	Apparatus For Processing Silicon Device With Improved Temperature Control
88118471	NI-129146	1999-10-26	2001-04-01	Lapsed	Taiwan	Method Of Manufacturing An Integrated Circuit Using A Scanning System And A Scanning System
88114626	NI-151235	1999-08-26	2002-03-01	Lapsed	Taiwan	Method For Making Dual-Polysilicon Structures In Integrated Circuits
87113667	NI-143565	1998-08-19	2001-10-21	Lapsed	Taiwan	Article Comprising An Oxide Layer On GaN
10303471	3720201	1998-10-26	2005-09-16	Lapsed	Japan	Scanning Electron Microscope System And Method Of Manufacturing An Integrated Circuit
11005911	3062485	1999-01-13	2000-04-28	Lapsed	Japan	Semiconductor Device
09714000	6607967	2000-11-15	2003-08-19	Granted	United States of America	Process for forming planarized isolation trench in integrated circuit structure on semiconductor substrate
10106377	3737277	1998-04-16	2005-11-04	Granted	Japan	Deuterated Dielectric And Polysilicon Film-Based Semiconductor Devices And Method Of Manufacture Thereof

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08262805	3530319	1996-10-03	2004-03-05	Expired	Japan	Compensation Of The Temperature Coefficient Of The Dielectric Constant Of Barium Strontium Titanate
11141016	3550316	1999-05-21	2004-04-30	Lapsed	Japan	Method Of Eliminating Agglomerate Particles In A Polishing Slurry
10171971	3878744	1998-06-19	2006-11-10	Granted	Japan	MOS Image Sensor
11160696	3655497	1999-06-08	2005-03-11	Lapsed	Japan	Single Crystal Silicon On Polycrystalline Silicon Integrated Circuits
11207606	3699301	1999-07-22	2005-07-15	Lapsed	Japan	Apparatus and Method for Integrated Circuit With Variable Capacitor
09283277	3153163	1997-10-16	2001-01-26	Lapsed	Japan	Integrated Circuit Device With Inductor Incorporated Therein
09360176	3253908	1997-12-26	2001-11-22	Granted	Japan	Integrated Circuit With Twin Tub
94128975	I368258	2005-08-24	2012-07-11	Lapsed	Taiwan	Guard Ring for Improved Matching
20030041375	803489	2003-06-25	2008-02-04	Lapsed	Korea, Republic of (KR)	Capacitor For A Semiconductor Device And Method For Fabrication Therefor
1020010018579	857727	2001-04-09	2008-09-03	Lapsed	Korea, Republic of (KR)	Interconnections To Copper IC's
1019990056953	671722	1999-12-11	2007-01-15	Lapsed	Korea, Republic of (KR)	Tungsten Silicide Nitride As An Electrode For Tantalum Pentoxide Devices
19990039502	632613	1999-09-15	2006-09-28	Lapsed	Korea, Republic of (KR)	Manufacture Of Mosfet Devices
1019990017300	304031	1999-05-14	2001-07-18	Lapsed	Korea, Republic of (KR)	Apparatus For Processing Silicon Device With Improved Temperature Control
9834393	373819	1998-08-25	2003-02-13	Lapsed	Korea, Republic of (KR)	THIN FILM CAPACITORS AND PROCESS FOR MAKING THEM
9815164	0307339	1998-04-28	2001-08-20	Lapsed	Korea, Republic of (KR)	Deuterated Dielectric And Polysilicon Film-Based Semiconductor Devices And Method Of Manufacture Thereof
1019970060838	516245	1997-11-18	2005-09-06	Lapsed	Korea, Republic of (KR)	Integrated Circuit Device With Inductor Incorporated Therein
1020000021415	697963	2000-04-22	2007-03-15	Lapsed	Korea, Republic of (KR)	A Method Of Forming A Multi-Layered Dual-Polysilicon Structure
1020010040533	753788	2001-07-06	2007-08-24	Lapsed	Korea, Republic of (KR)	Silicon-On-Insulator (SOI) Semiconductor Structure With Trench Including A Conductive Layer
10676934	6838379	2003-09-30	2005-01-04	Granted	United States of America	Process for reducing impurity levels, stress, and resistivity, and increasing grain size of copper filler in trenches and vias of integrated circuit structures to enhance electrical performance of copper filler
20030031929	10-0977947	2003-05-20	2010-08-18	Granted	Korea, Republic of (KR)	A Semiconductor Device Barrier Layer
1020030067833	10-988446	2003-09-30	2010-10-12	Lapsed	Korea, Republic of (KR)	Plate Capacitor Structure And Fabrication Method Therefor In A Dual Damascene Process
20040076311	10-1099907	2004-09-23	2011-12-21	Lapsed	Korea, Republic of (KR)	Metal-Oxide-Semiconductor Device Including A Buried Lightly-Doped Drain Region
2003334485	5039267	2003-09-26	2012-07-13	Lapsed	Japan	Plate Capacitor Structure And Fabrication Method Therefor In A Dual Damascene Process
09580939	6527867	2000-05-30	2003-03-04	Granted	United States of America	Method for enhancing anti-reflective coatings used in photolithography of electronic devices

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
2000265144	3958506	2000-09-01	2007-05-18	Lapsed	Japan	Semiconductor Device Having Regions Of Insulating Material Formed In A Semiconductor Substrate And Process Of Making The Device
11024534	3084015	1999-02-02	2000-06-30	Lapsed	Japan	Electronic Apparatus
10275117	3386385	1998-09-29	2003-01-10	Lapsed	Japan	Silicon IC Contacts Using Composite TiN Barrier Layer
10140989	3464607	1998-05-22	2003-08-22	Granted	Japan	Capacitor Comprising Improved Taox-Based Dielectric
2000372411	4749537	2000-12-07	2011-05-27	Lapsed	Japan	A Method Of Forming An Alignment Feature In Or On A Multi-Layered Semiconductor Structure
11260600	3774088	1999-09-14	2006-02-24	Lapsed	Japan	Manufacture Of Mosfet Devices
09146787	3550272	1997-06-04	2004-04-30	Lapsed	Japan	Method For Producing Tapered Lines
10453118	6864141	2003-06-03	2005-03-08	Granted	United States of America	Method of incorporating nitrogen into metal silicate based dielectrics by energized nitrogen ion beams
10406847	7005217	2003-04-04	2006-02-28	Lapsed	United States of America	Chromeless phase shift mask
2004283352	4948756	2004-09-29	2012-03-16	Lapsed	Japan	Inductor Formed In An Integrated Circuit
10290437	6837967	2002-11-06	2005-01-04	Granted	United States of America	Method and apparatus for cleaning deposited films from the edge of a wafer
2003145567	4964400	2003-05-23	2012-04-06	Lapsed	Japan	Abnormal Photoresist Line/Space Profile Detection Through Signal Processing of Metrology Waveform
2004144248	4791706	2004-05-14	2011-07-29	Lapsed	Japan	Split-Gate Metal-Oxide-Semiconductor Device
2005277005		2005-09-26		Abandoned	Japan	Thick Oxide Region In A Semiconductor Device
2004333824	5378635	2004-11-18	2013-10-04	Lapsed	Japan	Metal-Oxide-Semiconductor Device Formed in Silicon-On-Insulator
09735084	6586814	2000-12-11	2003-07-01	Lapsed	United States of America	Etch resistant shallow trench isolation in a semiconductor wafer
2000120437	4038530	2000-04-21	2007-11-16	Granted	Japan	A Method Of Forming A Multi-Layered Dual-Polysilicon Structure
2000093711	3387888	2000-03-30	2003-01-10	Lapsed	Japan	Lithographic Process For Device Fabrication Using Dark-Field Illumination
2005266157	4944414	2005-09-14	2012-03-09	Lapsed	Japan	Guard Ring for Improved Matching
2005101096430	ZL200510109643.0	2005-09-14	2012-05-30	Lapsed	China	Guard Ring for Improved Matching
200510078169X	ZL200510078169.X	2005-06-17	2009-09-30	Lapsed	China	Thick Oxide Region In A Semiconductor Device
10153011		2002-05-21		Abandoned	United States of America	Integrated Circuit Structure Having Low Dielectric Constant Material and Having Silicon Oxynitride Caps Over Closely Spaced Apart Metal Lines
09088801	6211517	1998-06-02	2001-04-03	Granted	United States of America	Electron beam fault detection of semiconductor devices
2004278820	5547361	2004-09-27	2014-05-23	Lapsed	Japan	Metal-Oxide-Semiconductor Device Including A Buried Lightly-Doped Drain Region
2001247517	5177924	2001-08-17	2013-01-18	Lapsed	Japan	Process For Fabricating A Semiconductor Device Having A Metal Oxide Or A Metal Silicate GateDielectric Layer
2002274695	5179693	2002-09-20	2013-01-18	Lapsed	Japan	Multiple Operating Voltage Vertical Replacement-Gate (VRG) Transistor

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
2001261004	5176050	2001-08-30	2013-01-18	Lapsed	Japan	Field Plated Resistor With Enhanced Routing Area Thereover
2006345124	5579358	2006-12-22	2014-07-18	Lapsed	Japan	Robust Shallow Trench Isolation Structures And A Method For Forming Shallow Trench Isolation Structures
2002270858	4797185	2002-09-18	2011-08-12	Lapsed	Japan	Bipolar Junction Transistor Compatible With Vertical Replacement Gate Transistors
09108092	6175124	1998-06-30	2001-01-16	Granted	United States of America	Method and apparatus for a wafer level system
10207607	6764749	2002-07-29	2004-07-20	Granted	United States of America	Method to improve the resolution of a photolithography system by use of a coupling layer between the photo resist and the ARC
10251082	7149340	2002-09-20	2006-12-12	Granted	United States of America	Mask defect analysis for both horizontal and vertical processing effects
10267810	6784102	2002-10-09	2004-08-31	Granted	United States of America	Laterally interconnecting structures
09675109	6472715	2000-09-28	2002-10-29	Granted	United States of America	Reduced soft error rate (SER) construction for integrated circuit structures
10216425	6569739	2002-08-08	2003-05-27	Granted	United States of America	Method of reducing the effect of implantation damage to shallow trench isolation regions during the formation of variable thickness gate layers
10288410	6707132	2002-11-05	2004-03-16	Granted	United States of America	High performance Si-Ge device module with CMOS technology
003000536	60023573.4	2000-01-06	2005-11-02	Granted	Germany (Federal Republic of)	Method For Making An Integrated Circuit Capacitor Including Tantalum Pentoxide
973035785	69729913.9	1997-05-27	2004-07-21	Expired	Germany (Federal Republic of)	Method For Producing Tapered Lines
963069646	69607715.9	1996-09-25	2000-04-12	Expired	Germany (Federal Republic of)	Compensation Of The Temperature Coefficient Of The Dielectric Constant Of Barium Strontium Titanate
10135383	7174281	2002-05-01	2007-02-06	Granted	United States of America	Method for analyzing manufacturing data
10106128	6733829	2002-03-19	2004-05-11	Granted	United States of America	Anti-binding deposition ring
983095977	69842401.8	1998-11-24	2011-09-07	Granted	Germany (Federal Republic of)	Method Of Manufacturing An Integrated Circuit Using Chemical Mechanical Polishing
993036359	69944270.2	1999-05-10	2012-06-20	Granted	Germany (Federal Republic of)	Apparatus For Processing Silicon Device With Improved Temperature Control
013070594	60127777.5	2001-08-20	2007-04-11	Lapsed	Germany (Federal Republic of)	Field Plated Resistor With Enhanced Routing Area Thereover
993040732	69942327.9	1999-05-26	2010-05-05	Granted	Germany (Federal Republic of)	Single Crystal Silicon On Polycrystalline Silicon Integrated Circuits
003067238	60006751.3	2000-08-07	2003-11-26	Lapsed	Germany (Federal Republic of)	Electrochemical Abatement Of Perfluorinated Compounds
003095783	60030386.1	2000-10-30	2006-08-30	Lapsed	Germany (Federal Republic of)	Method For Making Field Effect Devices And Capacitors With Thin Film Dielectrics And Resulting Devices

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
003049921	60020011.6	2000-06-13	2005-05-11	Granted	Germany (Federal Republic of)	An Integrated Circuit Having A Micromagnetic Device And Method Of Manufacture Therefor
003047974	60001600.5	2000-06-06	2003-03-12	Granted	Germany (Federal Republic of)	Process For Fabricating Vertical Transistors
993069186	69937217.8	1999-08-31	2007-10-03	Lapsed	Germany (Federal Republic of)	Article Having Passive Self-Assembly Inductor
983002049	69839597.2	1998-01-13	2008-06-11	Granted	Germany (Federal Republic of)	Semiconductor Device
983045238	69804380.4	1998-06-09	2002-03-27	Granted	Germany (Federal Republic of)	MOS Image Sensor
993055078	69900624.4	1999-07-12	2001-12-19	Granted	Germany (Federal Republic of)	Apparatus and Method for Integrated Circuit With Variable Capacitor
983079286	69823450.2	1998-09-29	2004-04-28	Lapsed	Germany (Federal Republic of)	Article Comprising An Oxide Layer On GaN
10242165	6842042	2002-09-11	2005-01-11	Lapsed	United States of America	Global chip interconnect
09792321	6458508	2001-02-23	2002-10-01	Granted	United States of America	Method of protecting acid-catalyzed photoresist from chip-generated basic contaminants
003105228	60039220.1	2000-11-27	2008-06-18	Granted	Germany (Federal Republic of)	Article Comprising A Dielectric Material Of Zr-Ge-Ti-O Or Hf-Ge-Ti-O And Method Of Making The Same
10036621	6935933	2001-12-21	2005-08-30	Lapsed	United States of America	Viscous electropolishing system
003023272	60030024.2	2000-03-22	2006-08-16	Lapsed	Germany (Federal Republic of)	Lithographic Process For Device Fabrication Using Dark-Field Illumination
003037868	60042468.5	2000-05-05	2009-07-01	Granted	Germany (Federal Republic of)	Improved Wehnelt Gun For Electron Lithography
10060002	6710851	2002-01-29	2004-03-23	Granted	United States of America	Multi pattern reticle
10067299	6621134	2002-02-07	2003-09-16	Granted	United States of America	Vacuum sealed RF/microwave microresonator
09213948	6528389	1998-12-17	2003-03-04	Granted	United States of America	Substrate planarization with a chemical mechanical polishing stop layer
09964157	6621146	2001-09-26	2003-09-16	Granted	United States of America	Method and apparatus for the use of embedded resistance to linearize and improve the matching properties of transistors
09209855	6303899	1998-12-11	2001-10-16	Granted	United States of America	Method and apparatus for scribing a code in an inactive outer clear out area of a semiconductor wafer
09974251	6513376	2001-10-10	2003-02-04	Lapsed	United States of America	Liquid level height measurement system
09994083	6549062	2001-11-21	2003-04-15	Granted	United States of America	Method and apparatus for improving the tolerance of integrated resistors
09974008	6658361	2001-10-10	2003-12-02	Lapsed	United States of America	Heaviest only fail potential
10615558	6989331	2003-07-08	2006-01-24	Granted	United States of America	Hard mask removal

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
10002981	6613665	2001-10-26	2003-09-02	Granted	United States of America	Process for forming integrated circuit structure comprising layer of low k dielectric material having antireflective properties in an upper surface
10002831	6528423	2001-10-26	2003-03-04	Granted	United States of America	Process for forming composite of barrier layers of dielectric material to inhibit migration of copper from copper metal interconnect of integrated circuit structure into adjacent layer of low k dielectric material
10061519	6752916	2002-02-01	2004-06-22	Granted	United States of America	Electrochemical planarization end point detection
08563688	6043139	1995-11-28	2000-03-28	Expired	United States of America	Process For Controlling Dopant Diffusion in a Semiconductor Layer and Semiconductor Layer
09950008	6664633	2001-09-10	2003-12-16	Lapsed	United States of America	Alkaline copper plating
10603041	7160799	2003-06-24	2007-01-09	Granted	United States of America	Define Via In Dual Damascene Process
2007206087	5121348	2007-08-08	2012-11-02	Granted	Japan	Local Area Alloying For Preventing Dishing Of Copper During Chemical Mechannical Polishing (CMP)
2007034850	5236884	2007-02-15	2013-04-05	Lapsed	Japan	Low K Dielectric Insulator and Method of Forming Semiconductor Circuit Structures
2007060148	4880501	1999-09-09	2011-12-09	Lapsed	Japan	Article Having Passive Self-Assembly Inductor
10435561	6852648	2003-05-09	2005-02-08	Lapsed	United States of America	Semiconductor Device Having A Low Dielectric Constant Dielectric Material And Process For Its Manufacture
09370963	6228748	1999-08-10	2001-05-08	Expired	United States of America	Use Of A Getter Layer To Improve Metal-To-Metal Contact Resistance At Low Radio Frequency Power
09291781	6317948	1999-04-14	2001-11-20	Expired	United States of America	Embedded Thin Film Passive Components
09333626	6264749	1999-06-15	2001-07-24	Expired	United States of America	Process For Making Composite Films
08566445	5688634	1995-12-01	1997-11-18	Expired	United States of America	Energy Sensitive Resist Material And Process For Device Fabrication Using The Resist Material
08716829	5693977	1996-09-05	1997-12-02	Expired	United States of America	N-Channel Field-Efect (sic) Transistor Including A Thin-Film Fullerene
09398977	6143658	1999-09-17	2000-11-07	Granted	United States of America	Multilevel Wiring Structure and Method of Fabricating a Multilevel Wiring Structure
08478133	5710055	1995-06-07	1998-01-20	Expired	United States of America	Method Of Making PMOSFETs Having Indium Or Gallium Doped Buried Channels And N\(plPolysilicon Gates And CMOS Devices Fabricated Therefrom
2001111006	5010782	2000-12-07	2012-06-08	Lapsed	Japan	A Method Of Forming An Alignment Feature In Or On A Multi-Layered Semiconductor Structure
2007108964	5247059	2000-01-12	2013-04-19	Lapsed	Japan	Method For Making An Integrated Circuit Capacitor Including Tantalum Pentoxide
08767153	5923524	1996-12-16	1999-07-13	Expired	United States of America	Dielectric Material Comprising Ta sub 2 O sub 5 Doped With TiO sub 2 And Devices Employing Same

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
200756483		2007-03-07		Abandoned	Japan	An Integrated Circuit Including ESD Circuits For A Multi-Chip Module And A Method Therefor
08746184	5976637	1996-11-06	1999-11-02	Expired	United States of America	Method For Coating Heterogeneous Substrates With Homogeneous Layers
2005060155	4276194	1998-06-19	2009-03-13	Lapsed	Japan	MOS Image Sensor
08931066	5804460	1997-09-15	1998-09-08	Expired	United States of America	Linewidth Metrology Of Integrated Circuit And Structures
08853210	5918116	1997-05-09	1999-06-29	Expired	United States of America	Process For Forming Different Gate Oxides Possessing Different Thicknesses On A Semiconductor Substrate
07866942	5679589	1992-04-03	1997-10-21	Expired	United States of America	FET With Gate Spacer
08156953	5982034	1993-11-19	1999-11-09	Expired	United States of America	Conductive Oxide Films
07719699	5744403	1991-06-25	1998-04-28	Expired	United States of America	Dielectric Film Deposition Method And Apparatus
09404702	6239035	1999-09-23	2001-05-29	Expired	United States of America	Semiconductor Wafer Fabrication
08697402	5728421	1996-08-23	1998-03-17	Expired	United States of America	Article Comprising Spinel-Structure Material On A Substrate, And Method Of Making The Article
08857079	5798300	1997-05-15	1998-08-25	Expired	United States of America	Method For Forming Conductors In Integrated Circuits
08610646	5620907	1996-03-04	1997-04-15	Expired	United States of America	Method For Making A Heterojunction Bipolar Transistor
1019980041563	364338	1998-10-02	2002-11-28	Granted	Korea, Republic of (KR)	Energy-Sensitive Resist Material And A Process For Device Fabrication UsingAn Energy-Sensitive Resist Material
983015629	69800033.1	1998-03-03	1999-10-27	Lapsed	Germany (Federal Republic of)	Energy-Sensitive Resist Material And A Process For Device Fabrication Using An Energy-Sensitive Resist Material
08961383	6106371	1997-10-30	2000-08-22	Expired	United States of America	Effective pad conditioning
08610026	5834800	1996-03-04	1998-11-10	Expired	United States of America	A Heterojunction Bipolar Transistor Having Monocrystalline SiGe Intrinsic Base And Polycrystalline SiGe and Si Extrinsic Base Regions
09543412	6346490	2000-04-05	2002-02-12	Granted	United States of America	Process for treating damaged surfaces of low k carbon doped silicon oxide dielectric material after plasma etching and plasma cleaning steps
09395062	6288453	1999-09-13	2001-09-11	Granted	United States of America	Alignment of openings in semiconductor fabrication
09553140	7751609	2000-04-20	2010-07-06	Lapsed	United States of America	A Method of Performing Oxide End-Point During CMP
1019980007413	588369	1998-03-06	2006-06-02	Lapsed	Korea, Republic of (KR)	Energy-Sensitive Resist Material And A Process For Device Fabrication Using An Energy-Sensitive Resist Material
10280394	3481469	1998-10-02	2003-10-10	Granted	Japan	Energy-Sensitive Resist Material And A Process For Device Fabrication UsingAn Energy-Sensitive Resist Material
09521312	6413881	2000-03-09	2002-07-02	Granted	United States of America	Process for forming thin gate oxide with enhanced reliability by nitridation of upper surface of gate of oxide to form barrier of nitrogen atoms in upper surface region of gate oxide, and resulting product
09706286	6544807	2000-11-03	2003-04-08	Granted	United States of America	Process monitor with statistically selected ring oscillator
10158641	6864563	2002-05-30	2005-03-08	Lapsed	United States of America	Grounding mechanism for semiconductor devices

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09574804	6426286	2000-05-19	2002-07-30	Granted	United States of America	Interconnection system with lateral barrier layer
09639440	6782500	2000-08-15	2004-08-24	Granted	United States of America	Statistical decision system
08770046	6180470	1996-12-19	2001-01-30	Expired	United States of America	FETs having lightly doped drain regions that are shaped with counter and noncounter dorant elements
09438642	6147012	1999-11-12	2000-11-14	Granted	United States of America	Process for forming low k silicon oxide dielectric material while suppressing pressure spiking and inhibiting increase in dielectric constant
08787992	6010952	1997-01-23	2000-01-04	Expired	United States of America	Process for forming metal silicide contacts using amorphization of exposed silicon while minimizing device degradation
09005364	6531397	1998-01-09	2003-03-11	Granted	United States of America	Method and apparatus for using across wafer back pressure differentials to influence the performance of chemical mechanical polishing
09487984	6448084	2000-01-20	2002-09-10	Granted	United States of America	Multiple metal etchant system for integrated circuits
1998542006	4386468	1998-04-02	2009-10-09	Granted	Japan	Process for Fabricating a Moderate-Depth Diffused Emitter Bipolar Transistor in a BICMOS Device Without Using an Additional Mask
09607177	6464566	2000-06-29	2002-10-15	Granted	United States of America	Apparatus and method for linearly planarizing a surface of a semiconductor wafer
10033164	6511925	2001-10-19	2003-01-28	Granted	United States of America	Process for forming high dielectric constant gate dielectric for integrated circuit structure
1999351216	4657412	1999-12-10	2011-01-07	Lapsed	Japan	Slurry Collecting Device for CMP Slurry Circulation
199207577	19920757.7	1999-05-05	2008-05-15	Granted	Germany (Federal Republic of)	Non-Linear Circuit Elements on Integrated Circuits
09347487	6281092	1999-07-02	2001-08-28	Granted	United States of America	Method for manufacturing a metal-to-metal capacitor utilizing only one masking step
87114682	142684	1998-09-04	2002-02-08	Lapsed	Taiwan	Standardized Gas Isolation Box (GIB) Installation
09216394	6235590	1998-12-18	2001-05-22	Granted	United States of America	Fabrication of differential gate oxide thicknesses on a single integrated circuit chip
09211922	6090724	1998-12-15	2000-07-18	Granted	United States of America	Method for composing a thermally conductive thin film having a low dielectric property
87115810	120367	1998-09-23	2001-02-01	Lapsed	Taiwan	A Method and Apparatus for Chemical Mechanical Polishing
09108091	6268224	1998-06-30	2001-07-31	Granted	United States of America	Method and apparatus for detecting an ion-implanted polishing endpoint layer within a semiconductor wafer
86119036	120428	1997-12-17	2001-02-05	Lapsed	Taiwan	Simple BiCMOS Process for Creation of Low Trigger Voltage SCR and Zener Diode Pad Protection
86118838	112608	1997-12-13	2000-07-04	Lapsed	Taiwan	Variable Step Height Control of Lithographic Patterning Through Transmitted Light Intensity Variation
979156007	69706043.8	1997-03-26	2001-08-08	Expired	Germany (Federal Republic of)	Method and Apparatus for Protecting Functions Imbedded Within an Integrated Circuit from Reverse Engineering

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09204767	6174407	1998-12-03	2001-01-16	Granted	United States of America	Apparatus and method for detecting an endpoint of an etching process by transmitting infrared light signals through a semiconductor wafer
09111529	6285035	1998-07-08	2001-09-04	Granted	United States of America	Apparatus for detecting an endpoint polishing layer of a semiconductor wafer having a wafer carrier with independent concentric sub-carriers and associated method
09082810	6206573	1998-05-21	2001-03-27	Granted	United States of America	High reliability bearing structure
86105907	NI-094528	1997-05-03	1998-09-10	Lapsed	Taiwan	Method and Apparatus for Protecting Functions Imbedded Within an Integrated Circuit from Reverse Engineering
87104961	118316	1998-04-02	2000-12-05	Lapsed	Taiwan	Process for Fabricating a Moderate-Depth Diffused Emitter Bipolar Transistor in a BICMOS Device Without Using an Additional Mask
09212931	6277707	1998-12-16	2001-08-21	Granted	United States of America	Method of manufacturing semiconductor device having a recessed gate structure
09942220	6898064	2001-08-29	2005-05-24	Lapsed	United States of America	System and method for optimizing the electrostatic removal of a workpiece from a chuck
09107342	6241847	1998-06-30	2001-06-05	Granted	United States of America	Method and apparatus for detecting a polishing endpoint based upon infrared signals
09131921	6080670	1998-08-10	2000-06-27	Granted	United States of America	Method of detecting a polishing endpoint layer of a semiconductor wafer which includes a non-reactive reporting specie
08580674	5645736	1995-12-29	1997-07-08	Expired	United States of America	Method for polishing a wafer
08767698	5976309	1996-12-17	1999-11-02	Expired	United States of America	Electrode assembly for plasma reactor
09046242	6071817	1998-03-23	2000-06-06	Granted	United States of America	Isolation method utilizing a high pressure oxidation
08763373	5821013	1996-12-13	1998-10-13	Expired	United States of America	Variable step height control of lithographic patterning through transmitted light intensity variation
08773471	5963828	1996-12-23	1999-10-05	Expired	United States of America	Method for tungsten nucleation from WF6 using titanium as a reducing agent
09075029	6093585	1998-05-08	2000-07-25	Granted	United States of America	High voltage tolerant thin film transistor
12344016	7898277	2008-12-24	2011-03-01	Granted	United States of America	Hot-Electron Injection Testing Of Transistors On A Wafer
11469032	7479438	2006-08-31	2009-01-20	Granted	United States of America	Method to Improve Performance Of A Bipolar Device Using An Amorphizing Implant
10953480	7197723	2004-09-29	2007-03-27	Granted	United States of America	Semiconductor Device Manufacturing
10878857	7148540	2004-06-28	2006-12-12	Granted	United States of America	Graded Conductive Structure For Use In A Metal\(miOxide\(miSemiconductor Device
10300365	6825538	2002-11-20	2004-11-30	Granted	United States of America	Semiconductor Device Using An Insulating Layer Having A Seed Layer
10007417	6683465	2001-10-31	2004-01-27	Granted	United States of America	Integrated Circuit Having Stress Migration Test Structure And Method Therefor
10007904	6747445	2001-10-31	2004-06-08	Granted	United States of America	Stress Migration Test Structure And Method Therefor

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09865124	6541819	2001-05-24	2003-04-01	Granted	United States of America	Semiconductor Device Having Non\(miPower Enhanced And Power Enhanced Metal Oxide Semiconductor And Method Of Manufacture Therefor
09935241	6548906	2001-08-22	2003-04-15	Granted	United States of America	Method For Reducing A Metal Seam In An Interconnect Structure And A Device Manufactured Thereby
09964041	6737311	2001-09-26	2004-05-18	Granted	United States of America	Semiconductor Device Having A Buried Layer For Reducing Latchup And A Method Of Manufacture Therefor
09731402	6896583	2001-02-06	2005-05-24	Lapsed	United States of America	Method And Apparatus For Conditioning A Polishing Pad
09653531	6630699	2000-08-31	2003-10-07	Granted	United States of America	Transistor Device Having An Isolation Structure Located Under A Source Region, Drain Region And Channel Region And A Method Of Manufacture Thereof
09653364	6569690	2000-08-31	2003-05-27	Granted	United States of America	Monitoring System For Determining Progress In A Fabrication Activity
09648015	6367329	2000-08-25	2002-04-09	Granted	United States of America	Acoustic Time Of Flight And Acoustic Resonance Methods For Detecting Endpoint In Plasma Processes
09640329	6362094	2000-08-16	2002-03-26	Granted	United States of America	Hydrogenated Silicon Carbide As A Liner For Self-Aligning Contact Vias
09737717	6551410	2000-12-15	2003-04-22	Granted	United States of America	Method Of Cleaning A Semiconductor Wafer With A Cleaning Brush Assembly Having A Contractible An Expandable Arbor
09611581	6435946	2000-07-07	2002-08-20	Granted	United States of America	Technique For Reducing Slivers On Optical Components Resulting From Friction Processes
09397716	6251546	1999-09-16	2001-06-26	Granted	United States of America	An Improved Method Of Fabricating Devices Using An Attenuated Phase-Shifting Mask And An Attenuated Phase-Shifting Mask
09520670	6611729	2000-03-07	2003-08-26	Granted	United States of America	System And Method For Introducing Multiple Component-Type Factors Into An Integrated Circuit Yield Prediction
09603340	6372605	2000-06-26	2002-04-16	Granted	United States of America	Additional Etching To Decrease Polishing Time for Shallow-Trench Isolation In Semiconductor Processing
09459708	6537135	1999-12-13	2003-03-25	Granted	United States of America	Curvilinear Chemical Mechanical Planarization Device And Method
09482390	6401929	2000-01-12	2002-06-11	Granted	United States of America	Insert For Use In Transporting A Wafer Carrier
09430635	6136615	1999-10-29	2000-10-24	Granted	United States of America	Migration From Control Wafer To Product Wafer Particle Checks
09376696	6206770	1999-08-18	2001-03-27	Granted	United States of America	Wafer Carrier Head For Prevention Of Unintentional Semiconductor Wafer Rotation
09399621	6281129	1999-09-20	2001-08-28	Granted	United States of America	Corrosion-Resistant Polishing Pad Conditioner
09338520	6815876	1999-06-23	2004-11-09	Lapsed	United States of America	Cathode With Improved Work Function And Method Of Making Same
10963156	7179148	2004-10-12	2007-02-20	Granted	United States of America	Cathode With Improved Work Function And Method For Making The Same

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
2000188555	3901915	2000-06-23	2007-01-12	Lapsed	Japan	Cathode With Improved Work Function And Method Of Making Same
89111997	NI-141143	2000-06-19	2001-09-11	Lapsed	Taiwan	Cathode With Improved Work Function And Method Of Making Same
003050150	60044167.9	2000-06-13	2010-04-14	Granted	Germany (Federal Republic of)	Cathode With Improved Work Function And Method Of Making Same
20000034530	744896	2000-06-22	2007-07-25	Lapsed	Korea, Republic of (KR)	Cathode With Improved Work Function And Method Of Making Same
003050150	1063669	2000-06-13	2010-04-14	Lapsed	France	Cathode With Improved Work Function And Method Of Making Same
003050150	1063669	2000-06-13	2010-04-14	Lapsed	United Kingdom	Cathode With Improved Work Function And Method Of Making Same
09477310	6559499	2000-01-04	2003-05-06	Granted	United States of America	Process For Fabricating An Integrated Circuit Device Having Capacitors With A Multilevel Metallization
09347313	6258610	1999-07-02	2001-07-10	Granted	United States of America	Method Analyzing A Semiconductor Surface Using Line Width Metrology With Auto-Correlation Operation
09346754		1999-07-02		Abandoned	United States of America	Method For Manufacturing Semiconductor Integrated Circuits With Etch Process Modification
09232120	6162733	1999-01-15	2000-12-19	Granted	United States of America	Method For Removing Contaminants From Integrated Circuits
09222587	6359317	1998-12-28	2002-03-19	Granted	United States of America	Vertical PNP Bipolar Transistor And Its Method Of Fabrication
09024601	6384446	1998-02-17	2002-05-07	Expired	United States of America	Integrated Circuit Fabrication
09090295	6093944	1998-06-04	2000-07-25	Granted	United States of America	Dielectric Materials Of Amorphous Compositions of Ti\(mi 02 Doped With Rare Earth Elements And Devices Employing Same
09058826	6091279	1998-04-13	2000-07-18	Granted	United States of America	Temperature Compensation of LDMOS Devices
09017103	6222863	1998-01-31	2001-04-24	Granted	United States of America	Article Comprising A Stable, Low-Resistance Ohmic Contact
09105712	6075909	1998-06-26	2000-06-13	Granted	United States of America	Optical Monitoring System For III\(miV Wafer Processing
08924728	6013556	1997-09-05	2000-01-11	Expired	United States of America	Method Of Integrated Circuit Fabrication
08727726	5779929	1996-10-07	1998-07-14	Expired	United States of America	Thin Film Metallization For Barium Nanotitanate Substrates
08674956	5683917	1996-07-03	1997-11-04	Expired	United States of America	Method Of Making A Low Noise Semiconductor Device Comprising A Screening Measurement
08572599	5855280	1995-12-14	1999-01-05	Expired	United States of America	Cassette Light
08509678	5620253	1995-07-31	1997-04-15	Expired	United States of America	Method Of Determining The Thermal Conductivity Of Electrically Insulating Crystalline Materials
08561473	5670396	1995-11-21	1997-09-23	Expired	United States of America	Methof Of Forming A DMOS-Controlled Lateral Bipolar Transistor
08412678	5588969	1995-03-29	1996-12-31	Expired	United States of America	Method for Supplying Phosphorous Vapor
08497470	5712176	1995-06-30	1998-01-27	Expired	United States of America	Doping Of Silicon Layers

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08278688	6197375	1994-07-21	2001-03-06	Granted	United States of America	Method Comprising Removal Of Material From A Diamond Film
08774036	5976943	1996-12-27	1999-11-02	Expired	United States of America	Method for Bi-Layer Programmable Resistor
08883403	5854510	1997-06-26	1998-12-29	Expired	United States of America	Low Power Programmable Fuse Structures
09055018	5882998	1998-04-03	1999-03-16	Expired	United States of America	Low power programmable fuse structures and methods for making the same
97342851	3973744	1997-12-12	2007-06-22	Lapsed	Japan	Two-Layer Type Programmable Resistor
099113363	I424152	2010-04-27	2014-01-21	Granted	Taiwan	An Electronic Pressure-Sensing Device
2010109863	5885909	2010-05-12	2016-02-19	Granted	Japan	An Electronic Pressure-Sensing Device
12465309	8037771	2009-05-13	2011-10-18	Granted	United States of America	Electronic Pressure-Sensing Device
1020100042858	101512527	2010-05-07	2015-04-09	Lapsed	Korea, Republic of (KR)	An Electronic Pressure-Sensing Device
101627768		2010-05-13		Application	European Patent	An Electronic Pressure-Sensing Device
2010101787444	ZL201010178744.4	2010-05-12	2014-07-02	Lapsed	China	An Electronic Pressure-Sensing Device
12290054	7972873	2008-10-27	2011-07-05	Granted	United States of America	Material Removing Processes In Device Formation And The Devices Formed Thereby
12112076	7977721	2008-04-30	2011-07-12	Granted	United States of America	High Voltage Tolerant Metal-Oxide-Semiconductor Device
13149122	8105912	2011-05-31	2012-01-31	Granted	United States of America	High Voltage Tolerant Metal-Oxide-Semiconductor Device
09741667	6518619	2000-12-19	2003-02-11	Granted	United States of America	Virtual-Ground, Split Gate Flash Memory Cell Arrangements and Method For Producing Same
11609509	7607112	2006-12-12	2009-10-20	Granted	United States of America	Method And Apparatus For Performing Metalization In An Integrated Circuit Process
100121509	I402965	2011-06-20	2013-07-21	Lapsed	Taiwan	Defectivity-Immune Technique of Implementing MiM-based Decoupling Capacitors
2011101979218	ZL2011101979218	2011-07-15	2015-04-08	Lapsed	China	Defectivity-Immune Technique of Implementing MiM-based Decoupling Capacitors
2011157508	5566346	2011-07-19	2014-06-27	Lapsed	Japan	Defectivity-Immune Technique of Implementing MiM-based Decoupling Capacitors
12839148	8411399	2010-07-19	2013-04-02	Granted	United States of America	Defectivity-Immune Technique of Implementing MiM-based Decoupling Capacitors
1020110069793	10-1395584	2011-07-14	2014-05-09	Lapsed	Korea, Republic of (KR)	Defectivity-Immune Technique of Implementing MiM-based Decoupling Capacitors
111745519		2011-07-19		Abandoned	European Patent	Defectivity-Immune Technique of Implementing MiM-based Decoupling Capacitors
12546855	8318606	2009-08-25	2012-11-27	Lapsed	United States of America	Dielectric Etching
11322103	7712066	2005-12-29	2010-05-04	Lapsed	United States of America	Area-Efficient Power Switching Cell
2006255124	5275558	2006-09-21	2013-05-24	Granted	Japan	Controlling Overspray Coating In Semiconductor Devices
1020060091668	10-1356667	2006-09-21	2014-01-22	Granted	Korea, Republic of (KR)	Controlling Overspray Coating In Semiconductor Devices
11832711	7772085	2007-08-02	2010-08-10	Lapsed	United States of America	Controlling Overspray Coating In Semiconductor Devices
06175889	2431042	2006-09-07	2011-07-27	Lapsed	United Kingdom	Controlling Overspray Coating In Semiconductor Devices

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095134838	I437785	2006-09-20	2014-05-11	Granted	Taiwan	Controlling Overspray Coating In Semiconductor Devices
11232074	7269197	2005-09-21	2007-09-11	Granted	United States of America	Controlling Overspray Coating In Semiconductor Devices
12680017		2010-03-25	2013-02-05	Abandoned	United States of America	Method to Reduce Trench Capacitor Leakage For Random Access Memory Device
11094975	7329605	2005-03-31	2008-02-12	Granted	United States of America	Semiconductor Structure Formed Using A Sacrificial Structure
11927978	7741702	2007-10-30	2010-06-22	Granted	United States of America	Semiconductor Structure Formed Using A Sacrificial Structure
11068237	7247556	2005-02-28	2007-07-24	Granted	United States of America	Control Of Wafer Warpage During Backend Processing
11124307	7399648	2005-05-06	2008-07-15	Granted	United States of America	Methods And Apparatus For Determining Location-Based On-Chip Variation Factor
11673645	7557010	2007-02-12	2009-07-07	Granted	United States of America	Method To Improve Writer Leakage in a SiGe Bipolar Device
12476994	7898038	2009-06-02	2011-03-01	Granted	United States of America	Method To Improve Writer Leakage in SiGe Bipolar Device
10902332	7111517	2004-07-29	2006-09-26	Lapsed	United States of America	Apparatus And Method For In-Situ Measuring Of Vibrational Energy In A Process Bath Of A Vibrational Cleaning System
10773614	7214568	2004-02-06	2007-05-08	Granted	United States of America	Semiconductor Device Configured For Reducing Post-Fabrication Damage
10778454	7005724	2004-02-13	2006-02-28	Lapsed	United States of America	A Semiconductor Device And A Method Of Manufacture Therefor
11167772	7811944	2005-06-27	2010-10-12	Lapsed	United States of America	A Semiconductor Device And A Method Of Manufacture Therefor
10675581	6906538	2003-09-30	2005-06-14	Granted	United States of America	Alternating Pulse Dual\(miBeam Apparatus, Methods And Systems For Voltage Contrast Behavior Assessment of Microcircuits
10919591	7339274	2004-08-17	2008-03-04	Granted	United States of America	Metallization Performance In Electronic Devices
10695193	6975040	2003-10-28	2005-12-13	Lapsed	United States of America	Fabricating Semiconductor Chips
10999704	7262476	2004-11-30	2007-08-28	Granted	United States of America	Semiconductor Device Having Improved Power Density
10981175	7573097	2004-11-03	2009-08-11	Lapsed	United States of America	Lateral Double Diffused MOS Transistors
10200233	6838213	2002-07-23	2005-01-04	Granted	United States of America	Process For Fabricating A Mask
09882624	6958518	2001-06-15	2005-10-25	Lapsed	United States of America	A Semiconductor Device Having At Least One Source\(slDrain Region Formed On An Isolation Region And A Method Of Manufacture Therefor
09943630	6648734	2001-08-30	2003-11-18	Granted	United States of America	Polishing Head For Pressurized Delivery Of Slurry
10008015	6703712	2001-11-13	2004-03-09	Granted	United States of America	Microelectronic Device Layer Deposited With Multiple Electrolytes
09859316	6433628	2001-05-17	2002-08-13	Granted	United States of America	Wafer Testable Integrated Circuit
09882623	6569744	2001-06-15	2003-05-27	Granted	United States of America	Method Of Converting A Metal Oxide Semiconductor Transistor Into A Bipolar Transistor
09927752	6503793	2001-08-10	2003-01-07	Granted	United States of America	Method For Concurrently Forming An ESD Protection Device And A Shallow Trench Isolation Region
10180221	6825467	2002-06-25	2004-11-30	Granted	United States of America	Apparatus For Scanning A Crystalline Sample And Associated Methods
10274765	6723581	2002-10-21	2004-04-20	Granted	United States of America	Semiconductor Device Having A High-K Gate Dielectric And Method Of Manufacture Thereof

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
10120767	6783426	2002-04-10	2004-08-31	Granted	United States of America	Method And Apparatus For Detection Of Chemical Mechanical Planarization Endpoint And Device Planarity
09771621	6440816	2001-01-30	2002-08-27	Granted	United States of America	Alignment Mark Fabrication Process To Limit Accumulation Of Errors In Level To Level Overlay
10140616	6828649	2002-05-07	2004-12-07	Lapsed	United States of America	Semiconductor Device Having An Interconnect That Electrically Connects A Conductive Material And A Doped Layer, And A Method Of Manufacture Therefor
10047516	6576563	2001-10-26	2003-06-10	Granted	United States of America	Method Of Manufacturing A Semiconductor Device Employing A Fluorine-Based Etch Substantially Free Of Hydrogen
09713106	6639285	2000-11-15	2003-10-28	Granted	United States of America	A Semiconductor Device
09606833	6319837	2000-06-29	2001-11-20	Granted	United States of America	Technique For Reducing Dishing In Cu-Based Interconnects
09954341	6659846	2001-09-17	2003-12-09	Granted	United States of America	Pad For Chemical Mechanical Polishing
09882961	6602758	2001-06-15	2003-08-05	Granted	United States of America	Formation Of Silicon On Insulator (SOI) Devices As An Add On Module For System On A Chip (SOC) Processing
02138634	2381378	2002-06-17	2006-01-25	Lapsed	United Kingdom	Formation Of Silicon On Insulator (SOI) Devices As An Add On Module For System On A Chip (SOC) Processing
091113153	NI-183665	2002-06-17	2003-08-11	Lapsed	Taiwan	Formation Of Silicon On Insulator (SOI) Devices As An Add On Module For System On A Chip (SOC) Processing
09632445	6436829	2000-08-04	2002-08-20	Granted	United States of America	Two Phase Chemical\(slMechanical Polishing Process For Tungsten Layers
09692012	6559011	2000-10-19	2003-05-06	Granted	United States of America	Dual Level Gate Process For Hot Carrier Control In Double Diffused MOS Transistors
09792266	6706603	2001-02-23	2004-03-16	Granted	United States of America	Method Of Forming A Semiconductor Device
09559494	6486075	2000-04-27	2002-11-26	Granted	United States of America	Anistropic Wet Etching Method
09966156	6695572	2001-09-28	2004-02-24	Granted	United States of America	Method And Apparatus For Minimizing Semiconductor Wafer Contamination
09706319	6358824	2000-11-03	2002-03-19	Granted	United States of America	Integrated Circuits with Tub-Ties and Shallow Trench Isolation
10122645	6750447	2002-04-12	2004-06-15	Lapsed	United States of America	Calibration Standard For High Resolution Electron Microscopy
09965739	6573183	2001-09-28	2003-06-03	Granted	United States of America	Method And Apparatus For Controlling Contamination During The Electroplating Deposition Of Metals Onto A Semiconductor Wafer Surface
09631862	6525394	2000-08-03	2003-02-25	Granted	United States of America	Improved Substrate Isolation For Analog\(slDigital IC Chips
09542362	6359400	2000-04-04	2002-03-19	Granted	United States of America	Direct Drive Spindle For Use In Chemical Vapor Deposition
09727326	6585830	2000-11-30	2003-07-01	Lapsed	United States of America	Method For Cleaning Tungsten From Deposition Wall Chambers
09713504	6559062	2000-11-15	2003-05-06	Granted	United States of America	Method For Avoiding Notching In A Semiconductor Interconnect During A Metal Etching Step
09651661	6555910	2000-08-29	2003-04-29	Granted	United States of America	Use Of Small Openings In Large Topography Features To Improve Dielectric Thickness Control And A Method Of Manufacture Thereof

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
10055583	6800255	2002-01-23	2004-10-05	Lapsed	United States of America	System And Method For The Abatement Of Toxic Constituents Of Effluent Gases
09665279	6558238	2000-09-19	2003-05-06	Granted	United States of America	Apparatus And Method For Reclamation Of Used Polishing Slurry
09532688	6423149	2000-03-22	2002-07-23	Granted	United States of America	Apparatus And Method For Improved Cleaning Of Post-CMP Semiconductor Wafers
09605507	6403397	2000-06-28	2002-06-11	Granted	United States of America	Process For Fabricating Organic Semiconductor Device Involving Selective Patterning
09785756	6544107	2001-02-16	2003-04-08	Granted	United States of America	Composite Polishing Pads For Chemical\(miMechanical Polishing
09490912	6579797	2000-01-25	2003-06-17	Granted	United States of America	Cleaning Brush Conditioning Apparatus
09567373	6519542	2000-05-09	2003-02-11	Granted	United States of America	Method Of Testing An Unknown Sample With An Analytical Tool
09567359	6519543	2000-05-09	2003-02-11	Granted	United States of America	Calibration Method For Quantitative Elemental Analysis
09659668	6495474	2000-09-11	2002-12-17	Granted	United States of America	Method Of Fabricating A Dielectric Layer
09718935	6514123	2000-11-21	2003-02-04	Granted	United States of America	Semiconductor Polishing Pad Alignment Device For A Polishing Apparatus And Method Of Use
09755826	7927939	2001-01-04	2011-04-19	Granted	United States of America	Method of Manufacturing a Laterally Diffused Metal Oxide Semiconductor Device
12555082	7927940	2009-09-08	2011-04-19	Granted	United States of America	Method of Manufacturing a Laterally Diffused Metal Oxide Semiconductor Device
10028614	6815302	2001-12-21	2004-11-09	Granted	United States of America	Method For Making A Bipolar Transistor With An Oxygen Implanted Emitter Window
09727325	6537887	2000-11-30	2003-03-25	Granted	United States of America	Integrated Circuit Fabrication
09821506	6615433	2001-03-29	2003-09-09	Granted	United States of America	Apparatus For Detecting Wetness Of A Semiconductor Wafer Cleaning Brush
09382611	6235072	1999-08-25	2001-05-22	Granted	United States of America	Glove Box Filter System
09809379	6870950	2001-03-15	2005-03-22	Granted	United States of America	Method For Detecting Defects In A Material And A System For Accomplishing The Same
09420234	6511221	1999-10-19	2003-01-28	Granted	United States of America	Apparatus For Measuring Thermomechanical Properties Of Photo\(miSensitive Materials
09442688	6246325	1999-11-18	2001-06-12	Granted	United States of America	A Distributed Communications System For Reducing Equipment Down-Time
09407575	6156675	1999-09-28	2000-12-05	Granted	United States of America	Apparatus And Method For Enhanced Dielectric Film Uniformity
09397459	6406999	1999-09-16	2002-06-18	Granted	United States of America	A Semicondutor Device Having Reduced Line Width Variations Between Tightly Spaced And Isolated Features
09397458	6395639	1999-09-16	2002-05-28	Granted	United States of America	A Process For Improving Line Width Variations Between Tightly Spaced And Isolated Features In Integrated Circuits
09494705	6354910	2000-01-31	2002-03-12	Granted	United States of America	Apparatus And Method For In-Situ Measurement Of Polishing Pad Thickness Loss
09533429	6616965	2000-03-23	2003-09-09	Lapsed	United States of America	Non\(miHydrolytic Sol\(miGel Process For High K Dielectric

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09356396	6259764	1999-07-16	2001-07-10	Granted	United States of America	Zone Plates For X-Rays
09591037	6451660	2000-06-09	2002-09-17	Granted	United States of America	Method Of Forming Bipolar Transistors Comprising A Native Oxide Layer Formed On A Substrate By Rinsing The Substrate In Ozinated Water
09562346	6391668	2000-05-01	2002-05-21	Granted	United States of America	Method Of Determining A Trap Density Of A Semiconductor\(slOxide Interface By A Contactless Charge Technique
09415529	6596639	1999-10-08	2003-07-22	Granted	United States of America	Method For Chemical\(slMechanical Planarization Of A Semiconductor Wafer Having Dissimilar Metal Pattern Densities
09426017	6254454	1999-10-25	2001-07-03	Granted	United States of America	Reference Thickness Endpoint Techniques For Polishing Operations
89112520	NI-139603	2000-06-26	2001-09-01	Granted	Taiwan	Diffusion Preventing Barrier Layer In Integrated Circuit Inter-Metal Layer Dielectrics
1020000048028	757214	2000-08-19	2007-09-04	Granted	Korea, Republic of (KR)	Diffusion Preventing Barrier Layer In Integrated Circuit Inter-Metal Layer Dielectrics
00194837	2359661	2000-08-08	2002-11-20	Lapsed	United Kingdom	Diffusion Preventing Barrier Layer In Integrated Circuit Inter-Metal Layer Dielectrics
09377386	6727588	1999-08-19	2004-04-27	Granted	United States of America	Diffusion Preventing Barrier Layer In Integrated Circuit Inter-Metal Layer Dielectrics
09491836	6368190	2000-01-26	2002-04-09	Granted	United States of America	Electrochemical Mechanical Planarization Apparatus And Method
09575214	6680542	2000-05-18	2004-01-20	Granted	United States of America	Damascene Structure Having A Metal-Oxide-Metal Capacitor Associated Therewith
09354657	6414383	1999-07-16	2002-07-02	Granted	United States of America	Very Low Magnetic Field Integrated Circuit
09388203	6362638	1999-09-01	2002-03-26	Granted	United States of America	Stacked Via Kelvin Resistance Test Structure For Measuring Contact Anomalies In Multi-Level Metal Integrated Circuit Technologies
09444817	6368955	1999-11-22	2002-04-09	Granted	United States of America	Method Of Polishing Semiconductor Structures Using Chemical Mechanical Planarization
09478725	6303426	2000-01-06	2001-10-16	Granted	United States of America	Method Of Forming A Capacitor Having A Tungsten Bottom Electrode In A Semiconductor Wafer
09266912	6048664	1999-03-12	2000-04-11	Granted	United States of America	Energy-Sensitive Resist Material And A Process For Device Fabrication Using An Energy-Sensitive Resist Material
09497982	6306313	2000-02-04	2001-10-23	Granted	United States of America	Selective Etching Of Thin Films
09305722	6736985	1999-05-05	2004-05-18	Granted	United States of America	High-Resolution Method For Patterning A Substrate With Micro-Printing

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09465880	6746577	1999-12-16	2004-06-08	Granted	United States of America	Method And Apparatus For Thickness Control And Reproducibility Of Dielectric Film Deposition
09390181	6387817	1999-09-07	2002-05-14	Granted	United States of America	Plasma Confinement Shield
09273299	6066884	1999-03-19	2000-05-23	Granted	United States of America	Schottky Diode Guard Ring Structures
09363781	6175137	1999-07-29	2001-01-16	Granted	United States of America	Monolithic Resistor Having Dynamically Controllable Impedance And Method Of Manufacturing The Same
09480387	6309900	2000-01-11	2001-10-30	Granted	United States of America	Test Structures For Testing Planarization Systems And Methods For Using Same
1020000046955	718823	2000-08-14	2007-05-10	Granted	Korea, Republic of (KR)	A Silicon-Germanium Transistor And Associated Methods
00194811	2356739	2000-08-08	2002-04-17	Lapsed	United Kingdom	A Silicon-Germanium Transistor And Associated Methods
89116118	NI-151814	2000-08-10	2002-03-11	Lapsed	Taiwan	A Silicon-Germanium Transistor And Associated Methods
09375150	6235560	1999-08-16	2001-05-22	Granted	United States of America	A Silicon-Germanium Transistor And Associated Methods
09370912	6287970	1999-08-06	2001-09-11	Granted	United States of America	Method Of Making A Semiconductor With Copper Passivating Film
09332216	6281128	1999-06-14	2001-08-28	Granted	United States of America	Wafer Carrier Modification For Reduced Extraction Force
09263445	6307252	1999-03-05	2001-10-23	Granted	United States of America	On-Chip Shielding Of Signals
09286430	6217427	1999-04-06	2001-04-17	Granted	United States of America	Mobius Strip Belt For Linear CMP Tools
09441676	6331460	1999-11-17	2001-12-18	Granted	United States of America	A Method Of Fabricating A MOM Capacitor Having A Metal Silicide Barrier
09441561	6335557	1999-11-17	2002-01-01	Granted	United States of America	Metal Silicide As A Barrier For MOM Capacitors In CMOS Technologies
09281642	6317643	1999-03-31	2001-11-13	Granted	United States of America	Manufacturing And Engineering Data Base
09236763	6278105	1999-01-25	2001-08-21	Granted	United States of America	Transistor Utilizing Photonic Band\(miGap Material And Integrated Circuit Devices Comprising Same
09197351	6246060	1998-11-20	2001-06-12	Granted	United States of America	Apparatus For Holding And Aligning A Scanning Electron Microscope Sample
09136095	6080671	1998-08-18	2000-06-27	Granted	United States of America	Process Of Chemical-Mechanical Polishing And Manufacturing An Integrated Circuit
09099715	6121124	1998-06-18	2000-09-19	Granted	United States of America	Process For Fabricating Integrated Circuits With Dual Gate Devices Therein
09113583	6146975	1998-07-10	2000-11-14	Granted	United States of America	Shallow Trench Isolation
08980943	5951382	1997-12-01	1999-09-14	Granted	United States of America	Chemical Mechanical Polishing Carrier Fixture and System
09039213	6043496	1998-03-14	2000-03-28	Granted	United States of America	Method Of Linewidth Monitoring For Nanolithography
09062606	5897362	1998-04-17	1999-04-27	Granted	United States of America	Bonding Silicon Wafers
08878579	6007685	1997-06-19	1999-12-28	Expired	United States of America	Deposition Of Highly Doped Silicon Dioxide Films
09089792	6090534	1998-06-03	2000-07-18	Granted	United States of America	Device And Method Of Decreasing Circular Defects And Charge Buildup In Integrated Circuit Fabrication

Schedule B(1)(a) – Semic Processing A

AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08887587	5811844	1997-07-03	1998-09-22	Expired	United States of America	Low Noise, High Power Pseudomorphic HEMT
08871385	6001701	1997-06-09	1999-12-14	Expired	United States of America	Process For Making Bipolar Having Graded Or Modulated Collector
08988420	6258241	1997-12-10	2001-07-10	Granted	United States of America	Process For Electroplating Metals
08807209	5861651	1997-02-28	1999-01-19	Expired	United States of America	Field Effect Devices And Capacitors With Improved Thin Film Dielectrics And Method For Making Same
08970298	5951372	1997-11-14	1999-09-14	Granted	United States of America	Method Of Roughing A Metallic Surface Of A Semiconductor Deposition Tool
08761052	5894154	1996-12-05	1999-04-13	Expired	United States of America	Improved P\(miChannel MOS Transistor
08834261	5902504	1997-04-15	1999-05-11	Expired	United States of America	Systems And Method For Determining Semiconductor Wafer Temperature And Calibrating A Vapor Deposition Device
08805404	6274198	1997-02-24	2001-08-14	Expired	United States of America	Shadow Mask Deposition
08904527	5930650	1997-08-01	1999-07-27	Expired	United States of America	Method Of Etching Silicon Materials
08767758	5735963	1996-12-17	1998-04-07	Expired	United States of America	Method Of Polishing
08775790	5960302	1996-12-31	1999-09-28	Expired	United States of America	Method Of Making A Dielectric For An Integrated Circuit
08577077	6078035	1995-12-22	2000-06-20	Expired	United States of America	Integrated Circuit Processing Utilizing Microwave Radiation
08705936	5966627	1996-08-30	1999-10-12	Expired	United States of America	In-situ Doped Silicon Layers
08516060	5654540	1995-08-17	1997-08-05	Expired	United States of America	High Resolution Remote Position Detection Using Segmented Gratings
08846769	5942775	1997-04-30	1999-08-24	Expired	United States of America	Photosensing Device With Improved Spectral Response And Low Thermal Leakage
08798580	5768335	1997-02-10	1998-06-16	Expired	United States of America	Apparatus And Method For Measuring The Orientation Of A Single Crystal Surface
08370902	5534465	1995-01-10	1996-07-09	Expired	United States of America	Method For Making Multichip Circuits Using Active Semiconductor Substrates
08362616	5538921	1994-12-22	1996-07-23	Expired	United States of America	Integrated Circuit Fabrication
08573923	5683758	1995-12-18	1997-11-04	Expired	United States of America	Method Of Forming Vias
08316745	5550583	1994-10-03	1996-08-27	Expired	United States of America	Inspection Apparatus And Method
08622797	5705298	1996-03-27	1998-01-06	Expired	United States of America	Holographic Method For Generating Three-Dimensional Conformal Photo-Lithographic Masks
08622795	5764390	1996-03-27	1998-06-09	Expired	United States of America	Holographic Method For Generating Three-Dimensional Conformal Photo-Lithographic Masks
08199910	6211539	1994-02-22	2001-04-03	Granted	United States of America	Semi-Insulated Indium Phosphide Based Compositions

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08943371	5898228	1997-10-03	1999-04-27	Expired	United States of America	On-chip misalignment indication
09150076	6221681	1998-09-09	2001-04-24	Expired	United States of America	On-chip misalignment indication
09943403	6521520	2001-08-30	2003-02-18	Granted	United States of America	Semiconductor wafer arrangement and method of processing a semiconductor wafer
10321250	6707114	2002-12-16	2004-03-16	Granted	United States of America	Semiconductor wafer arrangement of a semiconductor wafer
08796945	5804249	1997-02-07	1998-09-08	Expired	United States of America	Multistep tungsten CVD process with amorphization step
09067545	6016009	1998-04-27	2000-01-18	Expired	United States of America	Integrated circuit with tungsten plug containing amorphization layer
10619978	7071113	2003-07-14	2006-07-04	Granted	United States of America	Process for removal of photoresist mask used for making vias in low K carbon-doped silicon oxide dielectric material, and for removal of etch residues from formation of vias and removal of photoresist mask
09898194	6673721	2001-07-02	2004-01-06	Granted	United States of America	Process for removal of photoresist mask used for making vias in low k carbon-doped silicon oxide dielectric material, and for removal of etch residues from formation of vias and removal of photoresist mask
09946895	6372524	2001-09-05	2002-04-16	Granted	United States of America	Method for CMP endpoint detection
60273959		2001-03-06		Expired	United States of America	Detection of CMP Endpoint With Multiple Wavelength Lasers
08851607	5898478	1997-05-05	1999-04-27	Expired	United States of America	Method of using a test reticle to optimize alignment of integrated circuit process layers
08302598	5627624	1994-10-31	1997-05-06	Expired	United States of America	Integrated circuit test reticle and alignment mark optimization method
09477170	6495408	2000-01-04	2002-12-17	Granted	United States of America	Local interconnection process for preventing dopant cross diffusion in shared gate electrodes
09020029	6034401	1998-02-06	2000-03-07	Granted	United States of America	Local interconnection process for preventing dopant cross diffusion in shared gate electrodes
09076249		1998-05-12		Abandoned	United States of America	Mosfet Device With Improved LDD Region And Method Of Making Same
08791283	5780350	1997-01-30	1998-07-14	Expired	United States of America	MOSFET device with improved LDD region and method of making same
08962420		1997-10-31		Abandoned	United States of America	Hybrid Surface/Buried-Channel MOSFET
08719773	6246093	1996-09-25	2001-06-12	Expired	United States of America	Hybrid surface/buried-channel MOSFET
09300823	6030425	1999-04-27	2000-02-29	Expired	United States of America	Catalytic acceleration and electrical bias control of CMP processing
08652905	5948697	1996-05-23	1999-09-07	Expired	United States of America	Catalytic acceleration and electrical bias control of CMP processing
08788125		1997-01-23		Abandoned	United States of America	Wafer Clamp For Chemical Vapor Deposition
08520058	5635244	1995-08-28	1997-06-03	Expired	United States of America	Method of forming a layer of material on a wafer
08463064	5525837	1995-06-05	1996-06-11	Expired	United States of America	Reliable metallization with barrier for semiconductors

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08378750	5614437	1995-01-26	1997-03-25	Expired	United States of America	Method for fabricating reliable metallization with Ta-Si-N barrier for semiconductors
08942511		1997-10-02		Abandoned	United States of America	Self-Aligned Remote Polysilicon Contacts
08474794	5674774	1995-06-07	1997-10-07	Expired	United States of America	Method of making self-aligned remote polysilicon contacts
09792691	6649219	2001-02-23	2003-11-18	Lapsed	United States of America	Process for forming a low dielectric constant fluorine and carbon-containing silicon oxide dielectric material characterized by improved resistance to oxidation
10652007	7015168	2003-08-29	2006-03-21	Lapsed	United States of America	Low dielectric constant fluorine and carbon-containing silicon oxide dielectric material characterized by improved resistance to oxidation
07954958		1992-09-30		Abandoned	United States of America	Camera
08294076	5432333	1994-08-22	1995-07-11	Expired	United States of America	Image-sensing display panels with LCD display panel and photosensor array
08863372	5977535	1997-05-27	1999-11-02	Expired	United States of America	Light sensing device having an array of photosensitive elements coincident with an array of lens formed on an optically transmissive material
08017202		1993-02-11		Abandoned	United States of America	Camera Based Devices
08287128	5760834	1994-08-08	1998-06-02	Expired	United States of America	Electronic camera with binary lens element array
08287204	5519205	1994-08-08	1996-05-21	Expired	United States of America	Color electronic camera including photosensor array having binary diffractive lens elements
08578746	5648655	1995-12-26	1997-07-15	Expired	United States of America	Sensing device for capturing a light image
08051028	5340978	1993-04-21	1994-08-23	Expired	United States of America	Image-sensing display panels with LCD display panel and photosensitive element array
10942444	7381502	2004-09-16	2008-06-03	Lapsed	United States of America	Apparatus and method to improve the resolution of photolithography systems by improving the temperature stability of the reticle
10265856	6866970	2002-10-07	2005-03-15	Lapsed	United States of America	Apparatus and method to improve the resolution of photolithography systems by improving the temperature stability of the reticle
10838384		2004-05-04		Abandoned	United States of America	Implementation of Si-Ge HBT Module with CMOS Process
10191670	6767842	2002-07-09	2004-07-27	Granted	United States of America	Implementation of Si-Ge HBT with CMOS process
10889901	7365015	2004-07-13	2008-04-29	Granted	United States of America	Damascene replacement metal gate process with controlled gate profile and length using Si1-xGex as sacrificial material
12021728		2008-01-29		Abandoned	United States of America	Damascene replacement metal gate process with controlled gate profile and length using Si1-xGex as sacrificial material
09650038	6500740	2000-08-29	2002-12-31	Expired	United States of America	Process For Fabricating Semiconductor Devices In Which The Distribution Of Dopants Is Controlled
08902044	6406952	1997-07-29	2002-06-18	Expired	United States of America	Process For Device Fabrication

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
10272734	6989552	2002-10-17	2006-01-24	Lapsed	United States of America	Method For Making An Integrated Circuit Device With Dielectrically Isolated Tubs And Related Circuit
09728448	6500717	2000-12-01	2002-12-31	Granted	United States of America	Method For Making An Integrated Circuit Device With Dielectrically Isolated Tubs and Related Circuit
10300254	6762457	2002-11-20	2004-07-13	Granted	United States of America	LDMOS Device Having A Tapered Oxide
09641086	6506641	2000-08-17	2003-01-14	Granted	United States of America	The Use Of Selective Oxidation To Improve LDMOS Power Transistors
11390015		2006-03-27		Abandoned	United States of America	A Vertical Replacement-Gate Junction Field-Effect Transistor
09950384	6690040	2001-09-10	2004-02-10	Granted	United States of America	Vertical Replacement-Gate Junction Field-Effect Transistor
10723547	7033877	2003-11-26	2006-04-25	Lapsed	United States of America	A Vertical Replacement-Gate Junction Field-Effect Transistor
09885497	6617251	2001-06-19	2003-09-09	Granted	United States of America	Method of shallow trench isolation formation and planarization
10457942	6949446	2003-06-09	2005-09-27	Lapsed	United States of America	Method of shallow trench isolation formation and planarization
10409423	6821831	2003-04-08	2004-11-23	Lapsed	United States of America	Electrostatic Discharge Protection In Double Diffused MOS Transistors
09896669	6576506	2001-06-29	2003-06-10	Granted	United States of America	Electrostatic Discharge Protection In Double Diffused MOS Transistors
11821396	7800226	2007-06-22	2010-09-21	Lapsed	United States of America	Integrated Circuit With Metal Silicide Regions
10245447	7250356	2002-09-17	2007-07-31	Granted	United States of America	Method For Forming Metal Silicide Regions In An Integrated Circuit
10263638	6770536	2002-10-03	2004-08-03	Granted	United States of America	Process For Semiconductor Device Fabrication In Which A Insulating Layer Is Formed On A Semiconductor Substrate
10870834		2004-06-17		Abandoned	United States of America	Process For Semiconductor Device Fabrication In Which A Insulating Layer Is Formed On A Semiconductor Substrate
08979297	5849639	1997-11-26	1998-12-15	Granted	United States of America	Method For Removing Etching Residues And Contaminants
09164283	6046115	1998-10-01	2000-04-04	Granted	United States of America	Method for Removing Etching Residues and Contaminants
08814051	5936831	1997-03-06	1999-08-10	Expired	United States of America	Thin Film Tantalum Oxide Capacitors And Resulting Product
08918174	6075691	1997-08-25	2000-06-13	Expired	United States of America	THIN FILM CAPACITORS AND PROCESS FOR MAKING THEM
08752235	5811916	1996-11-19	1998-09-22	Expired	United States of America	Field Emission Devices Employing Enhanced Diamond Field Emitters
08752234	5744195	1996-11-19	1998-04-28	Expired	United States of America	Field Emission Devices Employing Enhanced Diamond Field Emitters
08331458	5637950	1994-10-31	1997-06-10	Expired	United States of America	Field Emission Devices Employing Enhanced Diamond Field Emitters
08379052	5561008	1995-01-27	1996-10-01	Expired	United States of America	A Process For Device Fabrication Using Projection Lithography And An Apparatus Therefor
08673705	5701014	1996-06-25	1997-12-23	Expired	United States of America	A Projection Lithography Apparatus
10383149	6872612	2003-03-06	2005-03-29	Lapsed	United States of America	Local interconnect for integrated circuit
11058498	7081379	2005-02-15	2006-07-25	Lapsed	United States of America	Local interconnect for integrated circuit
10028594	6624498	2001-12-20	2003-09-23	Granted	United States of America	Micromagnetic Device Having Alloy Of Combalt, Phosphorus and Iron
09552627	6495019	2000-04-19	2002-12-17	Granted	United States of America	Device Comprising Micromagnetic Components For Power Applications And Process For Forming Device

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09386132	6225182	1999-08-30	2001-05-01	Granted	United States of America	Simplified High Q Inductor Substrate
09800049	6410974	2001-03-05	2002-06-25	Granted	United States of America	Simplified High Q Inductor Substrate
10400279	6927494	2003-03-27	2005-08-09	Lapsed	United States of America	Local interconnect
09966464	6576544	2001-09-28	2003-06-10	Granted	United States of America	Local interconnect
09583434	6383332	2000-05-31	2002-05-07	Granted	United States of America	Endpoint detection method and apparatus which utilize a chelating agent to detect a polishing endpoint
09212503	6117779	1998-12-15	2000-09-12	Granted	United States of America	Endpoint detection method and apparatus which utilize a chelating agent to detect a polishing endpoint
12220644		2008-07-25		Abandoned	United States of America	In-Situ Metrology System and Method for Monitoring Metalization and Other Thin Film Formation
10328066	7414721	2002-12-23	2008-08-19	Granted	United States of America	In-situ metrology system and method for monitoring metalization and other thin film formation
10164909	6555475	2002-06-07	2003-04-29	Granted	United States of America	Arrangement and method for polishing a surface of a semiconductor wafer
09750639	6439981	2000-12-28	2002-08-27	Granted	United States of America	Arrangement and method for polishing a surface of a semiconductor wafer
10099641	6800940	2002-03-15	2004-10-05	Granted	United States of America	Low k dielectric composite layer for integrated circuit structure which provides void-free low k dielectric material between metal lines while mitigating via poisoning
09426056	6391795	1999-10-22	2002-05-21	Granted	United States of America	Low k dielectric composite layer for intergrated circuit structure which provides void-free low k dielectric material between metal lines while mitigating via poisoning
10197956	6807655	2002-07-16	2004-10-19	Lapsed	United States of America	Adaptive off tester screening method based on intrinsic die parametric measurements
60381746		2002-05-17		Expired	United States of America	Process and Apparatus for Wafer Edge Profile Control Using Gas Flow Control Ring
10821708		2004-04-09		Abandoned	United States of America	Process and Apparatus for Wafer Edge Profile Control Using Gas Flow Control Ring
10200469	6753255	2002-07-18	2004-06-22	Granted	United States of America	Process for wafer edge profile control using gas flow control ring
09609527	6455363	2000-07-03	2002-09-24	Granted	United States of America	System to improve SER immunity and punchthrough
10191107		2002-07-09		Abandoned	United States of America	System To Improve SER Immunity And Punchthrough
10602510	6768130	2003-06-24	2004-07-27	Granted	United States of America	Integration of semiconductor on implanted insulator
10060867	6613639	2002-01-30	2003-09-02	Granted	United States of America	Forming a semiconductor on implanted insulator
09690047	6557566	2000-10-16	2003-05-06	Granted	United States of America	Method and apparatus for washing drums
10370812	6672320	2003-02-20	2004-01-06	Lapsed	United States of America	Apparatus for washing drums
10002413	6621404	2001-10-23	2003-09-16	Granted	United States of America	Low temperature coefficient resistor
10615039	6960979	2003-07-08	2005-11-01	Lapsed	United States of America	Low temperature coefficient resistor
09528071	6530074	2000-03-17	2003-03-04	Granted	United States of America	Apparatus For Verification Of IC Mask Sets

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
10317147	7103869	2002-12-11	2006-09-05	Lapsed	United States of America	Method Of Verifying IC Mask Sets
08678971	5821148	1996-07-12	1998-10-13	Expired	United States of America	Method of Fabricating a Segmented Emitter Low Noise Transistor
08484675	5723897	1995-06-07	1998-03-03	Expired	United States of America	Segmented Emitter Low Noise Transistor
09643784	6383923	2000-08-22	2002-05-07	Granted	United States of America	Article Comprising Vertically Nano-InterConnected Circuit Devices And Method For Making The Same
09426457	6340822	1999-10-05	2002-01-22	Granted	United States of America	Article Comprising Vertically Nano-InterConnected Circuit Devices And Method For Making The Same
09408299	6323044	1999-09-29	2001-11-27	Granted	United States of America	Integrated Circuit Capacitor And Associated Fabrication Methods
09951178	6525358	2001-09-13	2003-02-25	Granted	United States of America	Capacitor Having The Lower Electrode For Preventing Undesired Defects At The Surface Of The Metal Plug
10776752	6927125	2004-02-11	2005-08-09	Granted	United States of America	Interdigitated Capacitor And Method Of Manufacturing Thereof
09929188	6740922	2001-08-14	2004-05-25	Granted	United States of America	Interdigitated Capacitor And Method Of Manufacturing Thereof
08878242	6090686	1997-06-18	2000-07-18	Expired	United States of America	LOCOS Isolation Process Using Layered PAD Nitride And Dry Field Oxidation Stack And Semiconductor Device Employing The Same
09205413	6380606	1998-12-02	2002-04-30	Expired	United States of America	Locos Isolation Process Using A Layered Pad Nitride And Dry Field Oxidation Stack And Semiconductor Device Employing The Same
08562235	5773338	1995-11-21	1998-06-30	Expired	United States of America	Bipolar Transistor With MOS-Controlled Protection For Reverse-Biased Emitter-Base Junction
09050711	5949128	1998-03-30	1999-09-07	Expired	United States of America	Bipolar Transistor With MOS\(miControlled Protection For Reverse\(miBiased Emitter\(miBase Junction
12253403	7960812	2008-10-17	2011-06-14	Granted	United States of America	Electrical Devices Having Adjustable Capacitance
10746824	7456716	2003-12-24	2008-11-25	Granted	United States of America	Electrical Devices Having Adjustable Electrical Characteristics
08848141	6054722	1997-04-28	2000-04-25	Expired	United States of America	Current Drive of TFTs in High\(miSpeed SRAMs
08572196	5625200	1995-12-14	1997-04-29	Expired	United States of America	Complementary Devices Using Thin Film Transistors With Improved Current Drive
10234354	7126198	2002-09-03	2006-10-24	Lapsed	United States of America	Protruding Spacers For Self-Aligned Contacts
11542864	7332775	2006-10-04	2008-02-19	Granted	United States of America	Protruding Spacers For Self-Aligned Contacts
08381375	5616368	1995-01-31	1997-04-01	Expired	United States of America	Field Emission Devices Employing Activated Diamond Particle Emitters And Methods For Making Same
08361616	5709577	1994-12-22	1998-01-20	Expired	United States of America	Method Of Making Field Emission Devices Employing Ultra-Fine Diamond Particle Emitters
09006347	5977697	1998-01-13	1999-11-02	Expired	United States of America	Field Emission Devices Employing Diamond Particle Emitters
09573137	6566186	2000-05-17	2003-05-20	Granted	United States of America	Capacitor with stoichiometrically adjusted dielectric and method of fabricating same
10382709	6951787	2003-03-06	2005-10-04	Lapsed	United States of America	Capacitor with stoichiometrically adjusted dielectric and method of fabricating same
11122375		2005-05-05		Abandoned	United States of America	Capacitor with Stoichiometrically Adjusted Dielectric and Method of Fabricating Same

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09960765	6504219	2001-09-21	2003-01-07	Granted	United States of America	Indium field implant for punchthrough protection in semiconductor devices
09469579	6342429	1999-12-22	2002-01-29	Granted	United States of America	Method of fabricating an indium field implant for punchthrough protection in semiconductor devices
09211024	6168502	1998-12-14	2001-01-02	Expired	United States of America	Subsonic to supersonic and ultrasonic conditioning of a polishing pad in a chemical mechanical polishing apparatus
08696445	5868608	1996-08-13	1999-02-09	Expired	United States of America	Subsonic to supersonic and ultrasonic conditioning of a polishing pad in a chemical mechanical polishing apparatus
09052851	6057571	1998-03-31	2000-05-02	Granted	United States of America	High aspect ratio, metal-to-metal, linear capacitor for an integrated circuit
09221023	6251740	1998-12-23	2001-06-26	Granted	United States of America	Method of forming and electrically connecting a vertical interdigitated metal-insulator-metal capacitor extending between interconnect layers in an integrated circuit
09219655	6417535	1998-12-23	2002-07-09	Granted	United States of America	Vertical interdigitated metal-insulator-metal capacitor for an integrated circuit
09052793	6358837	1998-03-31	2002-03-19	Granted	United States of America	Method of electrically connecting and isolating components with vertical elements extending between interconnect layers in an integrated circuit
09525489	6441419	2000-03-15	2002-08-27	Granted	United States of America	Encapsulated-metal vertical-interdigitated capacitor and damascene method of manufacturing same
09907424	6489231	2001-07-17	2002-12-03	Granted	United States of America	Method for forming barrier and seed layer
10268735		2002-10-10		Abandoned	United States of America	Barrier and Seed Layer System
09027307	6004880	1998-02-20	1999-12-21	Granted	United States of America	Method of single step damascene process for deposition and global planarization
09365440	6090239	1999-08-02	2000-07-18	Granted	United States of America	Method of single step damascene process for deposition and global planarization
08604867	5688709	1996-02-14	1997-11-18	Expired	United States of America	Method for forming composite trench-fin capacitors for DRAMS
08879341	6081008	1997-06-20	2000-06-27	Expired	United States of America	Composite trench-fin capacitors for DRAM
08552461	5670425	1995-11-09	1997-09-23	Expired	United States of America	Process for making integrated circuit structure comprising local area interconnects formed over semiconductor substrate by selective deposition on seed layer in patterned trench
08873809	5895261	1997-06-12	1999-04-20	Expired	United States of America	Process for making integrated circuit structure comprising local area interconnects formed over semiconductor substrate by selective deposition on seed layer in patterned trench
09454257	6297558	1999-12-02	2001-10-02	Expired	United States of America	Slurry filling a recess formed during semiconductor fabrication
08899111	6069085	1997-07-23	2000-05-30	Expired	United States of America	Slurry filling a recess formed during semiconductor fabrication

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08752334		1996-11-19		Abandoned	United States of America	Structure For Reduction Of Channeling During Implantation Of Source And Drain Regions In Formation Of Mos Integrated Circuit Structures
08546921	5614428	1995-10-23	1997-03-25	Expired	United States of America	Process and structure for reduction of channeling during implantation of source and drain regions in formation of MOS integrated circuit structures
08704472	5763302	1996-08-20	1998-06-09	Expired	United States of America	Self-aligned twin well process
08768845	5770492	1996-12-18	1998-06-23	Expired	United States of America	Self-aligned twin well process
08488075	5583062	1995-06-07	1996-12-10	Expired	United States of America	Self-aligned twin well process having a SiO2-polysilicon-SiO2 barrier mask
08374193	5646073	1995-01-18	1997-07-08	Expired	United States of America	Process for selective deposition of polysilicon over single crystal silicon substrate and resulting product
08823829	5818100	1997-03-25	1998-10-06	Expired	United States of America	Product resulting from selective deposition of polysilicon over single crystal silicon substrate
08566161		1995-11-30		Abandoned	United States of America	Product Resulting From Selective Deposition Of Polysilicon Over Single Crystal Silicon Substrate
08438613		1995-05-10		Abandoned	United States of America	Microelectronic Integrated Circuit Including Triangular Semiconductor And Gate Device
08567952	5631581	1995-12-06	1997-05-20	Expired	United States of America	Microelectronic integrated circuit including triangular semiconductor and gate device
08788403	5739580	1997-01-27	1998-04-14	Expired	United States of America	Oxide formed in semiconductor substrate by implantation of substrate with a noble gas prior to oxidation
08434674	5707888	1995-05-04	1998-01-13	Expired	United States of America	Oxide formed in semiconductor substrate by implantation of substrate with a noble gas prior to oxidation
11383171	7460211	2006-05-12	2008-12-02	Lapsed	United States of America	Apparatus for wafer patterning to reduce edge exclusion zone
10980945	7074710	2004-11-03	2006-07-11	Lapsed	United States of America	Method of wafer patterning for reducing edge exclusion zone
10893659	7071094	2004-07-16	2006-07-04	Granted	United States of America	Dual layer barrier film techniques to prevent resist poisoning
11418873	7393780	2006-05-04	2008-07-01	Granted	United States of America	Dual layer barrier film techniques to prevent resist poisoning
09896363	6812134	2001-06-28	2004-11-02	Granted	United States of America	Dual layer barrier film techniques to prevent resist poisoning
08485517	5696428	1995-06-07	1997-12-09	Expired	United States of America	Apparatus and method using optical energy for specifying and quantitatively controlling chemically-reactive components of semiconductor processing plasma etching gas
08986681		1997-12-08		Abandoned	United States of America	Apparatus For Igniting Low Pressure Inductively Coupled Plasma
11964920	7565592	2007-12-27	2009-07-21	Lapsed	United States of America	Failure Analysis and Testing of Semi-Conductor Devices Using Intelligent Software on Automated Test Equipment (ATE)
11670031	7430700	2007-02-01	2008-09-30	Granted	United States of America	Failure analysis and testing of semi-conductor devices using intelligent software on automated test equipment (ATE)

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11028695	7203877	2005-01-04	2007-04-10	Granted	United States of America	Failure analysis and testing of semi-conductor devices using intelligent software on automated test equipment (ATE)
08955384	5897381	1997-10-21	1999-04-27	Expired	United States of America	Method of forming a layer and semiconductor substrate
08954791	5893952	1997-10-21	1999-04-13	Expired	United States of America	Apparatus for rapid thermal processing of a wafer
08678718	5756369	1996-07-11	1998-05-26	Expired	United States of America	Rapid thermal processing using a narrowband infrared source and feedback
10930590	8404960	2004-08-31	2013-03-26	Granted	United States of America	Method for Heat Dissipation on Semiconductor Device
13775922	8653357	2013-02-25	2014-02-18	Lapsed	United States of America	Method for Heat Dissipation on Semiconductor Device
10921538	7129101	2004-08-18	2006-10-31	Lapsed	United States of America	Failure analysis vehicle for yield enhancement with self test at speed burnin capability for reliability testing
11527108	7420229	2006-09-25	2008-09-02	Granted	United States of America	Failure analysis vehicle for yield enhancement with self test at speed burnin capability for reliability testing
10307018	6781151	2002-11-27	2004-08-24	Granted	United States of America	Failure analysis vehicle
08521795	5585286	1995-08-31	1996-12-17	Expired	United States of America	Implantation of a semiconductor substrate with controlled amount of noble gas ions to reduce channeling and/or diffusion of a boron dopant subsequently implanted into the substrate to form P-LDD region of a PMOS device
08677078	5717238	1996-07-09	1998-02-10	Expired	United States of America	Substrate with controlled amount of noble gas ions to reduce channeling and/or diffusion of a boron dopant forming P-LDD region of a PMOS device
08502566	5543643	1995-07-13	1996-08-06	Expired	United States of America	Combined JFET and MOS transistor device, circuit
08612337	5631176	1996-03-06	1997-05-20	Expired	United States of America	Method of making combined JFET & MOS transistor device
08578743	5686855	1995-12-26	1997-11-11	Expired	United States of America	Process monitor for CMOS integrated circuits
08287653	5486786	1994-08-09	1996-01-23	Expired	United States of America	Process monitor for CMOS integrated circuits
08506821	5631596	1995-07-25	1997-05-20	Expired	United States of America	Process monitor for CMOS integrated circuits
11425295	8089130	2006-06-20	2012-01-03	Granted	United States of America	Semiconductor Device And Process For Reducing Damaging Breakdown In Gate Dielectrics
13311299	8241986	2011-12-05	2012-08-14	Granted	United States of America	Semiconductor Device And Process For Reducing Damaging Breakdown In Gate Dielectrics
09804783	6586326	2001-03-13	2003-07-01	Lapsed	United States of America	Metal planarization system
10400278	6951808	2003-03-27	2005-10-04	Lapsed	United States of America	Metal planarization system
11337460	7220362	2006-01-23	2007-05-22	Granted	United States of America	Planarization with reduced dishing
10421068	7029591	2003-04-23	2006-04-18	Lapsed	United States of America	Planarization with reduced dishing
11695169		2007-04-02		Abandoned	United States of America	Planarization with Reduced Dishing
10801310	7395522	2004-03-16	2008-07-01	Granted	United States of America	Yield profile manipulator
12117379	7930655	2008-05-08	2011-04-19	Granted	United States of America	Yield Profile Manipulator
08473543	5659189	1995-06-07	1997-08-19	Expired	United States of America	Layout configuration for an integrated circuit gate array

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08665016	5650348	1996-06-11	1997-07-22	Expired	United States of America	Method of making an integrated circuit chip having an array of logic gates
08892827	5773854	1997-07-15	1998-06-30	Expired	United States of America	Method of fabricating a linearly continuous integrated circuit gate array
09792683	6572925	2001-02-23	2003-06-03	Granted	United States of America	Process for forming a low dielectric constant fluorine and carbon containing silicon oxide dielectric material
10397993		2003-03-25		Abandoned	United States of America	Low Dielectric Constant Fluorine and Carbon-Containing Silicon Oxide Dielectric Material Characterized by Improved Resistance to Oxidation
10243562	6885436	2002-09-13	2005-04-26	Lapsed	United States of America	Optical error minimization in a semiconductor manufacturing apparatus
11473627	7298458	2006-06-22	2007-11-20	Granted	United States of America	Optical error minimization in a semiconductor manufacturing apparatus
11075195	7098996	2005-03-07	2006-08-29	Lapsed	United States of America	Optical error minimization in a semiconductor manufacturing apparatus
11419548	7259462	2006-05-22	2007-08-21	Granted	United States of America	Interconnect dielectric tuning
10915719	7081406	2004-08-10	2006-07-25	Lapsed	United States of America	Interconnect dielectric tuning
10417708	7056392	2003-04-16	2006-06-06	Lapsed	United States of America	Wafer chucking apparatus and method for spin processor
11403137	7201176	2006-04-11	2007-04-10	Granted	United States of America	Wafer chucking apparatus for spin processor
10153011	6794756	2002-05-21	2004-09-21	Granted	United States of America	Integrated circuit structure having low dielectric constant material and having silicon oxynitride caps over closely spaced apart metal lines
09425552	6423628	1999-10-22	2002-07-23	Granted	United States of America	Method of forming integrated circuit structure having low dielectric constant material and having silicon oxynitride caps over closely spaced apart metal lines
11258253	7582938	2005-10-25	2009-09-01	Lapsed	United States of America	I/O and Power ESD Protection Circuits by Enhancing Substrate-Bias In Deep-Submicron CMOS Process
12506746	7948036	2009-07-21	2011-05-24	Granted	United States of America	I/O and Power ESD Protection Circuits by Enhancing Substrate-Bias In Deep-Submicron CMOS Process
13110581	8269280	2011-05-18	2012-09-18	Granted	United States of America	I/O and Power ESD Protection Circuits by Enhancing Substrate-Bias In Deep-Submicron CMOS Process
10676602	6979869	2003-10-01	2005-12-27	Granted	United States of America	Substrate-biased I/O and power ESD protection circuits in deep-submicron twin-well process
10328614	6972217	2002-12-23	2005-12-06	Lapsed	United States of America	Low k polymer E-beam printable mechanical support
11225310	7358594	2005-09-12	2008-04-15	Granted	United States of America	Method of forming a low k polymer E-beam printable mechanical support
10706120	6855586	2003-11-12	2005-02-15	Granted	United States of America	Low voltage breakdown element for ESD trigger device
10055082	6710990	2002-01-22	2004-03-23	Granted	United States of America	Low voltage breakdown element for ESD trigger device

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11007392	7619272	2004-12-07	2009-11-17	Lapsed	United States of America	Bi-Axial Texturing Of High-K Dielectric Films To Reduce Leakage Currents
12574479	7956401	2009-10-06	2011-06-07	Granted	United States of America	Bi-Axial Texturing Of High-K Dielectric Films To Reduce Leakage Currents
11506659	7456076	2006-08-18	2008-11-25	Granted	United States of America	Techniques for forming passive devices during semiconductor back-end processing
10944373	7122436	2004-09-16	2006-10-17	Lapsed	United States of America	Techniques for forming passive devices during semiconductor back-end processing
11856196	7612427	2007-09-17	2009-11-03	Granted	United States of America	Apparatus For Confining Inductively Coupled Surface Currents
11248509	7397105	2005-10-12	2008-07-08	Granted	United States of America	Apparatus to passivate inductively or capacitively coupled surface currents under capacitor structures
11010970	7285840	2004-12-12	2007-10-23	Granted	United States of America	Apparatus for confining inductively coupled surface currents
60578890		2004-06-10		Abandoned	United States of America	Vortex Phase Shift Mask Applied to Optical Direct Write
13722648	9188848	2012-12-20	2015-11-17	Lapsed	United States of America	Maskless Vortex Phase Shift Optical Direct Write Lithography
13253554	8377633	2011-10-05	2013-02-19	Lapsed	United States of America	Maskless Vortex Phase Shift Optical Direct Write Lithography
11011896	8057963	2004-12-14	2011-11-15	Lapsed	United States of America	Maskless Vortex Phase Shift Optical Direct Write Lithography
11210986		2005-08-24		Abandoned	United States of America	Temperature Control System
09670975	6967177	2000-09-27	2005-11-22	Granted	United States of America	Temperature control system
10035501	6743474	2001-10-25	2004-06-01	Granted	United States of America	Method for growing thin films
10804980	7081296	2004-03-16	2006-07-25	Lapsed	United States of America	Method for growing thin films
11741195	7825522	2007-04-27	2010-11-02	Lapsed	United States of America	Hybrid Bump Capacitor
12885722	8384226	2010-09-20	2013-02-26	Lapsed	United States of America	Hybrid Bump Capacitor
10327283		2002-12-19		Abandoned	United States of America	Diamond Metal-Filled Patterns Achieving Low Parasitic Coupling Capacitance
11016468	6998716	2004-12-16	2006-02-14	Granted	United States of America	Diamond metal-filled patterns achieving low parasitic coupling capacitance
10035704	6727177	2001-10-18	2004-04-27	Granted	United States of America	Multi-step process for forming a barrier film for use in copper layer formation
11733673	7413984	2007-04-10	2008-08-19	Granted	United States of America	Multi-step process for forming a barrier film for use in copper layer formation
10772133	7229923	2004-02-03	2007-06-12	Granted	United States of America	Multi-step process for forming a barrier film for use in copper layer formation
10265867		2002-10-07		Abandoned	United States of America	MOS Transistor Having Aluminum Nitride Gate Structure And Method Of Manufacturing Same
09472331	6495409	1999-12-23	2002-12-17	Granted	United States of America	MOS Transistor Having Aluminum Nitride Gate Structure And Method Of Manufacturing Same

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11106307		2005-04-14		Abandoned	United States of America	Ultra Low Dielectric Constant Thin Film
10691400	6905909	2003-10-22	2005-06-14	Lapsed	United States of America	Ultra low dielectric constant thin film
11540056	7239160	2006-09-29	2007-07-03	Granted	United States of America	Method Of Electrical Testing Of An Integrated Circuit With An Electrical Probe
11138152	7132840	2005-05-26	2006-11-07	Granted	United States of America	Method Of Electrical Testing
10825342	7270942	2004-04-14	2007-09-18	Granted	United States of America	Optimized mirror design for optical direct write
60513780		1900-01-01		Abandoned	United States of America	New Optimized Mirror Design for Optical Direct Write
11769486	7738078	2007-06-27	2010-06-15	Lapsed	United States of America	Optimized Mirror Design For Optical Direct Write
09818799	6400090	2001-03-27	2002-06-04	Granted	United States of America	Electron Emitters For Lithography Tools
09306287	6232040	1999-05-06	2001-05-15	Granted	United States of America	Electron Emitters For Lithography Tools
09332061	6251543	1999-06-14	2001-06-26	Granted	United States of America	Process For Fabricating A Projection Electron Lithography Mask And A Removable, Reuseable Cover For Use Therein
09854753	6372393	2001-05-15	2002-04-16	Granted	United States of America	Process For Fabricating A Projection Electron Lithography Mask And A Removable, Reuseable Cover For Use Therein
08879100	6121159	1997-06-19	2000-09-19	Expired	United States of America	Polymeric dielectric layers having low dielectric constants and improved adhesion to metal lines
09618211	6455934	2000-07-10	2002-09-24	Expired	United States of America	Polymeric dielectric layers having low dielectric constants and improved adhesion to metal lines
10628601	6943055	2003-07-28	2005-09-13	Lapsed	United States of America	Method and apparatus for detecting backside contamination during fabrication of a semiconductor wafer
10138742	6627466	2002-05-03	2003-09-30	Lapsed	United States of America	Method and apparatus for detecting backside contamination during fabrication of a semiconductor wafer
10368811	6977400	2003-02-18	2005-12-20	Lapsed	United States of America	Silicon germanium CMOS channel
09724444	6544854	2000-11-28	2003-04-08	Granted	United States of America	Silicon germanium CMOS channel
10454027	6880140	2003-06-04	2005-04-12	Lapsed	United States of America	Method to selectively identify reliability risk die based on characteristics of local regions on the wafer
11031564	7390680	2005-01-06	2008-06-24	Granted	United States of America	Method to selectively identify reliability risk die based on characteristics of local regions on the wafer
09652479	6373087	2000-08-31	2002-04-16	Granted	United States of America	Methods of Fabricating A Metal-Oxide-Metal Capacitor And Associated Apparatus
10080186	6730601	2002-02-21	2004-05-04	Granted	United States of America	Methods of Fabricating A Metal-Oxide-Metal Capacitor
10020304	6747318	2001-12-13	2004-06-08	Granted	United States of America	Buried channel devices and a process for their fabrication simultaneously with surface channel devices to produce transistors and capacitors with multiple electrical gate oxides
10786481		2004-02-24		Abandoned	United States of America	Buried Channel Devices And A Process For Their Fabrication Simultaneously With Surface Channel Devices To Produce Transistors And Capacitors With Multiple Electrical Gate Oxides
11265062	7635888	2005-11-02	2009-12-22	Granted	United States of America	Interdigitated Capacitors

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10886763	7022581	2004-07-08	2006-04-04	Granted	United States of America	Interdigitated Capacitors
12616050	8039923	2009-11-10	2011-10-18	Granted	United States of America	Interdigitated Capacitors
10649140	6821851	2003-08-27	2004-11-23	Granted	United States of America	Method Of Making Ultra Thin Body Vertical Replacement Gate Mosfet
10164202	6635924	2002-06-06	2003-10-21	Granted	United States of America	Ultra Thin Body Vertical Replacement Gate Mosfet
09335707	6197641	1999-06-18	2001-03-06	Granted	United States of America	Process For Fabricating Vertical Transistors
09143274	6027975	1998-08-28	2000-02-22	Granted	United States of America	Process For Fabricating Vertical Transistors
11641507	7537984	2006-12-19	2009-05-26	Lapsed	United States of America	III-V Power Field Effect Transistors
10948897	7180103	2004-09-24	2007-02-20	Granted	United States of America	III/V Power Field Effect Transistors
10404832	7329926	2003-04-01	2008-02-12	Granted	United States of America	Semiconductor Device With Constricted Current Passage
11872347	7569445	2007-10-15	2009-08-04	Lapsed	United States of America	Semiconductor Device With Constricted Current Passage
09723557	6455418	2000-11-28	2002-09-24	Granted	United States of America	Barrier For Copper Metallization
09218649	6288449	1998-12-22	2001-09-11	Granted	United States of America	Barrier For Copper Metallization
11533785	8049282	2006-09-21	2011-11-01	Lapsed	United States of America	Bipolar Device Having Buried Contacts
13222877	8372723	2011-08-31	2013-02-12	Lapsed	United States of America	Bipolar Device Having Buried Contacts
09602797	6288454	2000-06-23	2001-09-11	Granted	United States of America	Semiconductor wafer having a layer-to-layer alignment mark and method for fabricating the same
09311253	6136662	1999-05-13	2000-10-24	Granted	United States of America	Semiconductor wafer having a layer-to-layer alignment mark and method for fabricating the same
11937199	7560292	2007-11-08	2009-07-14	Lapsed	United States of America	Voltage Contrast Monitor for Integrated Circuit Defects
10652369	6936920	2003-08-29	2005-08-30	Lapsed	United States of America	Voltage contrast monitor for integrated circuit defects
11131705	7323768	2005-05-18	2008-01-29	Lapsed	United States of America	Voltage contrast monitor for integrated circuit defects
09246402	6214675	1999-02-08	2001-04-10	Granted	United States of America	A Method For Fabricating A Merged Integrated Circuit Device
09789254	6627963	2001-02-20	2003-09-30	Granted	United States of America	Method For Fabricating A Merged Integrated Circuit Device
11827807	7632690	2007-07-13	2009-12-15	Lapsed	United States of America	Real-Time Gate Etch Critical Dimension Control By Oxygen Monitoring
10675572	7261745	2003-09-30	2007-08-28	Granted	United States of America	Real-Time Gate Etch Critical Dimension Control By Oxygen Monitoring
10814682		2004-03-31		Abandoned	United States of America	Semiconductor Device Having A Doped Lattice Matching Layer And A Method Of Manufacture Therefor
10003873	6737339	2001-10-24	2004-05-18	Granted	United States of America	Semiconductor Device Having A Doped Lattice Matching Layer And A Method Of Manufacture Therefor
10814680	6855991	2004-03-31	2005-02-15	Granted	United States of America	Semiconductor Device Having A Doped Lattice Matching Layer And A Method Of Manufacture Therefor
10773900	7078280	2004-02-06	2006-07-18	Lapsed	United States of America	Vertical Replacement-Gate Silicon-On-Insulator Transistor
11419356	7259048	2006-05-19	2007-08-21	Granted	United States of America	Vertical Replacement-Gate Silicon-On-Insulator Transistor
09968234	6709904	2001-09-28	2004-03-23	Granted	United States of America	Vertical Replacement-Gate (VRG) Silicon-On-Insulator (SOI) CMOS Transistor

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11419252	7381607	2006-05-19	2008-06-03	Granted	United States of America	A Method Of Forming A Spiral Inductor In A Semiconductor Substrate
10646997	7075167	2003-08-22	2006-07-11	Lapsed	United States of America	A Spiral Inductor Formed In A Semiconductor Substrate And A Method For Forming The Inductor
10918981	7345354	2004-08-16	2008-03-18	Granted	United States of America	Increased Quality Factor Of A Varactor In An Integrated Circuit Via A High Conductive Region In A Well
10454133	6825089	2003-06-04	2004-11-30	Granted	United States of America	Increased Quality Factor Of A Varactor In An Integrated Circuit Via A High Conductive Region In A Well
10648602	6884720	2003-08-25	2005-04-26	Granted	United States of America	Forming copper interconnects with Sn coatings
11074456	7675177	2005-03-07	2010-03-09	Lapsed	United States of America	Forming Copper Interconnects with SN Coatings
09434424	6284663	1999-11-04	2001-09-04	Granted	United States of America	Method For Making Field Effect Devices And Capacitors With Thin Film Dielectrics And Resulting Devices
09060420	6001741	1998-04-15	1999-12-14	Granted	United States of America	Method For Making Field Effect Devices And Capacitors With Improved Thin Film Dielectrics And Resulting Devices
10400310	6753268	2003-03-27	2004-06-22	Granted	United States of America	Reduced particulate etching
09898267	6576981	2001-07-03	2003-06-10	Granted	United States of America	Reduced particulate etching
09071006	5907165	1998-05-01	1999-05-25	Granted	United States of America	InP Heterostructure Devices
09255845	6165859	1999-02-23	2000-12-26	Granted	United States of America	Method Of Making InP Heterostructure Devices
08965706	6107191	1997-11-07	2000-08-22	Granted	United States of America	Method Of Creating An Interconnect In A Substrate And Semiconductor Device Employing The Same
09428073	6222255	1999-10-27	2001-04-24	Granted	United States of America	Method Of Creating an Interconnect In A Substrate And Semiconductor Device Employing The Same
08848109	6025280	1997-04-28	2000-02-15	Expired	United States of America	System And Method For Forming A High Quality Ultrathin Gate Oxide Layer
09338939	6281138	1999-06-24	2001-08-28	Expired	United States of America	System And Method For Forming A High Quality Ultrathin Gate Oxide Layer
09049531	6033202	1998-03-27	2000-03-07	Granted	United States of America	Mold For Non-Photolithographic Fabrication Of Microstructures
09393032	6322736	1999-09-09	2001-11-27	Granted	United States of America	Mold For Non-Photolithographic Fabrication Of Microstructures
08820063	5913146	1997-03-18	1999-06-15	Expired	United States of America	Semiconductor Device Having Aluminum Contacts Or Vias And Method Of Manufacture Therefor
09166832	6157082	1998-10-05	2000-12-05	Expired	United States of America	Semiconductor Device Having Aluminum Contacts Or Vias And Method Of Manufacture Therefor
08346444	5462012	1994-11-29	1995-10-31	Expired	United States of America	Substrates and Methods for Gas Phase Deposition of Semiconductors and Other Materials
08475110	5589693	1995-06-07	1996-12-31	Expired	United States of America	Substrates and methods for gas phase deposition of semiconductors and othermaterials
09073556	6028359	1998-05-06	2000-02-22	Expired	United States of America	Integrated Circuit Having Amorphous Silicide Layer In Contacts And Vias And Method Of Manufacture Therefor

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08816185	5858873	1997-03-12	1999-01-12	Expired	United States of America	Integrated Circuit Having Amorphous Silicide Layer In Contacts And Vias AndMethod Of Manufacture Therefor
09489092	6498364	2000-01-21	2002-12-24	Granted	United States of America	A Capacitor For Integration With Copper Damascene Processes
10195935	7135733	2002-07-16	2006-11-14	Granted	United States of America	Capacitor For Integration With Copper Damascene Processes And A Method Of Manufacture Therefore
09580530	6333508	2000-05-30	2001-12-25	Granted	United States of America	Illumination System For Electron Beam Lithography Tool
09414004	7345290	1999-10-07	2008-03-18	Granted	United States of America	Lens Array For Electron Beam Lithography Tool
09642376	6534851	2000-08-21	2003-03-18	Granted	United States of America	Modular Semiconductor Substrates
10303280	6713409	2002-11-25	2004-03-30	Granted	United States of America	Semiconductor Manufacturing Using Modular Substrates
09557536	6387772	2000-04-25	2002-05-14	Granted	United States of America	Method For Forming Trenches Capacitors In Soi Substrates
10072500	6552381	2002-02-05	2003-04-22	Granted	United States of America	Trench Capacitors In Soi Substrates
09654689	6613651	2000-09-05	2003-09-02	Lapsed	United States of America	Integrated circuit isolation system
10383031	6831348	2003-03-06	2004-12-14	Lapsed	United States of America	Integrated circuit isolation system
09737504	6271911	2000-12-15	2001-08-07	Granted	United States of America	Apparatus for enhancing image contrast using intensity filtration
09557946	6549322	2000-04-24	2003-04-15	Granted	United States of America	Method and apparatus for enhancing image contrast using intensity filtration
10368812	7033710	2003-02-18	2006-04-25	Lapsed	United States of America	Method and apparatus for enhancing image contrast using intensity filtration
09106720		1998-06-29		Abandoned	United States of America	Method and Apparatus for Enhancing Image Contrast Using Intensity Filtration
10418560	6861864	2003-04-16	2005-03-01	Lapsed	United States of America	Self-timed reliability and yield vehicle array
10900642	7308627	2004-07-27	2007-12-11	Granted	United States of America	Self-timed reliability and yield vehicle with gated data and clock
10909821		2004-08-02		Abandoned	United States of America	Semiconductor Wafer Chuck Assembly for a Semiconductor Processing Device
10461255	6805338	2003-06-13	2004-10-19	Granted	United States of America	Semiconductor wafer chuck assembly for a semiconductor processing device
09540473	6373266	2000-03-31	2002-04-16	Granted	United States of America	Apparatus And Method For Determining Process Width Variations In Integrated Circuits
10053097	6728940	2002-01-18	2004-04-27	Granted	United States of America	Apparatus And Method For Determining Process Width Variations In Integrated Circuits
09466715	6458648	1999-12-17	2002-10-01	Granted	United States of America	Method For In-Situ Removal Of Side Walls In MOM Capacitor Formation
10215170	6656850	2002-08-08	2003-12-02	Granted	United States of America	Method For In-Situ Removal Of Side Walls In MOM Capacitor Formation
10147384	6683382	2002-05-16	2004-01-27	Granted	United States of America	Semiconductor Device Having An Interconnect Layer With A Plurality Of Layout Regions Having Substantially Uniform Densities Of Active Interconnects And Dummy Fills

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09484310	6436807	2000-01-18	2002-08-20	Granted	United States of America	Method For Making An Interconnect Layer And A Semiconductor Device Including The Same
10414601	7276441	2003-04-15	2007-10-02	Granted	United States of America	Dielectric barrier layer for increasing electromigration lifetimes in copper interconnect structures
12764004	8043968	2010-04-20	2011-10-25	Granted	United States of America	Dielectric Barrier Layer For Increasing Electromigration Lifetimes In Copper Interconnect Structures
11736402	7728433	2007-04-17	2010-06-01	Lapsed	United States of America	Dielectric Barrier Layer For Increasing Electromigration Lifetimes In Copper Interconnect Structures
09861839	6475931	2001-05-21	2002-11-05	Granted	United States of America	Method For Producing Devices Having Piezoelectric Films
09502868	6329305	2000-02-11	2001-12-11	Granted	United States of America	Method For Producing Devices Having Piezoelectric Films
10418375	6982229	2003-04-18	2006-01-03	Lapsed	United States of America	Ion recoil implantation and enhanced carrier mobility in CMOS device
11098290	7129516	2005-04-04	2006-10-31	Lapsed	United States of America	Ion recoil implantation and enhanced carrier mobility in CMOS device
10360903	6874510	2003-02-07	2005-04-05	Lapsed	United States of America	Method to use a laser to perform the edge clean operation on a semiconductor wafer
11014476		2004-12-16		Abandoned	United States of America	Method to Use a Laser to Perform the Edge Clean Operation on a Semiconductor Wafer
08791244	6117736	1997-01-30	2000-09-12	Expired	United States of America	Method of fabricating insulated-gate field-effect transistors having different gate capacitances
09594478	6300663	2000-06-15	2001-10-09	Expired	United States of America	Insulated-gate field-effect transistors having different gate capacitances
09665988	6553166	2000-09-20	2003-04-22	Lapsed	United States of America	Concentric optical cable with full duplex connectors
09956409		2001-09-19		Abandoned	United States of America	Parallel Active Optical SCSI Cable
10697506	7323228	2003-10-29	2008-01-29	Granted	United States of America	Method of vaporizing and ionizing metals for use in semiconductor processing
11939482	7670645	2007-11-13	2010-03-02	Lapsed	United States of America	Method of Treating Metal and Metal Salts to Enable Thin Layer Deposition in Semiconductor Processing
10253158	6713394	2002-09-24	2004-03-30	Granted	United States of America	Process for planarization of integrated circuit structure which inhibits cracking of low dielectric constant dielectric material adjacent underlying raised structures
09661465	6489242	2000-09-13	2002-12-03	Granted	United States of America	Process for planarization of integrated circuit structure which inhibits cracking of low dielectric constant dielectric material adjacent underlying raised structures
09724225	6521549	2000-11-28	2003-02-18	Granted	United States of America	Method of reducing silicon oxynitride gate insulator thickness in some transistors of a hybrid integrated circuit to obtain increased differential in gate insulator thickness with other transistors of the hybrid circuit

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10304631	6656805	2002-11-26	2003-12-02	Lapsed	United States of America	Method of reducing silicon oxynitride gate insulator thickness in some transistors of a hybrid integrated circuit to obtain increased differential in gate insulator thickness with other transistors of the hybrid circuit
10205229	6566268	2002-07-25	2003-05-20	Granted	United States of America	Method and apparatus for planarizing a wafer surface of a semiconductor wafer having an elevated portion extending therefrom
09364140	6451699	1999-07-30	2002-09-17	Granted	United States of America	Method and apparatus for planarizing a wafer surface of a semiconductor wafer having an elevated portion extending therefrom
09517150	6479857	2000-03-02	2002-11-12	Lapsed	United States of America	Capacitor having a tantalum lower electrode and method of forming the same
10228859	6861310	2002-08-27	2005-03-01	Lapsed	United States of America	Capacitor having a tantalum lower electrode and method of forming the same
12191171	7646077	2008-08-13	2010-01-12	Granted	United States of America	Dielectric Barrier Films For Use As Copper Barrier Layers In Semiconductor Trench And Via Structures
10321938	6939800	2002-12-16	2005-09-06	Lapsed	United States of America	Dielectric barrier films for use as copper barrier layers in semiconductor trench and via structures
11131003	7427563	2005-05-16	2008-09-23	Granted	United States of America	Dielectric barrier films for use as copper barrier layers in semiconductor trench and via structures
09723516	6436845	2000-11-28	2002-08-20	Granted	United States of America	Silicon nitride and silicon dioxide gate insulator transistors and method of forming same in a hybrid integrated circuit
10171700	6562729	2002-06-14	2003-05-13	Granted	United States of America	Silicon nitride and silicon dioxide gate insulator transistors and method of forming same in a hybrid integrated circuit
10195044	6858531	2002-07-12	2005-02-22	Granted	United States of America	Electro chemical mechanical polishing method
11007694	7285145	2004-12-07	2007-10-23	Granted	United States of America	Electro chemical mechanical polishing method and device for planarizing semiconductor surfaces
10131431	6627556	2002-04-24	2003-09-30	Granted	United States of America	Method of chemically altering a silicon surface and associated electrical devices
10600665	6822308	2003-06-20	2004-11-23	Lapsed	United States of America	Method of chemically altering a silicon surface and associated electrical devices
10195775	6673200	2002-07-12	2004-01-06	Granted	United States of America	Method of reducing process plasma damage using optical spectroscopy
60384499		1900-01-01		Abandoned	United States of America	Impact of F Species on Plasma Charge Damage in a RF Aher
10680503	6972840	2003-10-06	2005-12-06	Lapsed	United States of America	Method of reducing process plasma damage using optical spectroscopy
10210365	6641698	2002-08-01	2003-11-04	Granted	United States of America	Integrated circuit fabrication dual plasma process with separate introduction of different gases into gas flow

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09747638	6461972	2000-12-22	2002-10-08	Granted	United States of America	Integrated circuit fabrication dual plasma process with separate introduction of different gases into gas flow
12034750		2008-02-21		Abandoned	United States of America	Laser Marking Hole Shape Of Semiconductor Wafer
10020764	7371659	2001-12-12	2008-05-13	Granted	United States of America	Substrate laser marking
09617550	6569751	2000-07-17	2003-05-27	Granted	United States of America	Low via resistance system
10400252	6893962	2003-03-27	2005-05-17	Granted	United States of America	Low via resistance system
09395507	6328802	1999-09-14	2001-12-11	Granted	United States of America	Method and apparatus for determining temperature of a semiconductor wafer during fabrication thereof
09952540	6794310	2001-09-14	2004-09-21	Granted	United States of America	Method and apparatus for determining temperature of a semiconductor wafer during fabrication thereof
11381409		2006-05-03		Abandoned	United States of America	Adjustable Transmission Phase Shift Mask
10972898	7067223	2004-10-25	2006-06-27	Lapsed	United States of America	Adjustable transmission phase shift mask
10039508	6841308	2001-11-09	2005-01-11	Lapsed	United States of America	Adjustable transmission phase shift mask
09670448	6486064	2000-09-26	2002-11-26	Granted	United States of America	Shallow junction formation
10268736	6605846	2002-10-10	2003-08-12	Granted	United States of America	Shallow junction formation
09212315	6358819	1998-12-15	2002-03-19	Granted	United States of America	Dual gate oxide process for deep submicron ICS
10026282		2001-12-21		Abandoned	United States of America	Dual Gate Oxide Process for Deep Submicron ICS
60314148		1900-01-01		Abandoned	United States of America	Process Enhancement to Prevent LI or Borderless Contact To Well Leakage
10360746	6893937	2003-02-05	2005-05-17	Granted	United States of America	Method for preventing borderless contact to well leakage
11104050	7098515	2005-04-11	2006-08-29	Lapsed	United States of America	Semiconductor chip with borderless contact that avoids well leakage
10006540	6551901	2001-11-30	2003-04-22	Granted	United States of America	Method for preventing borderless contact to well leakage
12574426	8021955	2009-10-06	2011-09-20	Granted	United States of America	Method Characterizing Materials For A Trench Isolation Structure Having Low Trench Parasitic Capacitance
11262173	7619294	2005-10-28	2009-11-17	Lapsed	United States of America	Shallow Trench Isolation Structure With Low Trench Parasitic Capacitance
09991202	7001823	2001-11-14	2006-02-21	Lapsed	United States of America	Method of manufacturing a shallow trench isolation structure with low trench parasitic capacitance
10196787	6787180	2002-07-17	2004-09-07	Granted	United States of America	Exhaust flow control system
09666507	6579371	2000-09-20	2003-06-17	Granted	United States of America	Exhaust flow control system
09952790	6964924	2001-09-11	2005-11-15	Lapsed	United States of America	Integrated circuit process monitoring and metrology system
11072127	7115425	2005-03-04	2006-10-03	Lapsed	United States of America	Integrated circuit process monitoring and metrology system
10044864	7115991	2001-10-22	2006-10-03	Lapsed	United States of America	Method for creating barriers for copper diffusion
11104763	7829455	2005-04-12	2010-11-09	Granted	United States of America	Method For Creating Barriers For Copper Diffusion
09879642	6495312	2001-06-12	2002-12-17	Granted	United States of America	Method and apparatus for removing photoresist edge beads from thin film substrates

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10263593	6614507	2002-10-03	2003-09-02	Granted	United States of America	Apparatus for removing photoresist edge beads from thin film substrates
09775223		2001-02-01		Abandoned	United States of America	Method and Apparatus for Removing Photoresist Edge Beads From Thin Film Substrates
11927950	7579245	2007-10-30	2009-08-25	Lapsed	United States of America	Dual-Gate Metal-Oxide Semiconductor Device
10999705	7329922	2004-11-30	2008-02-12	Granted	United States of America	Dual\(miGate Metal\(miOxide Semiconductor Device
10688231	7005703	2003-10-17	2006-02-28	Lapsed	United States of America	Metal-Oxide Semiconductor Device Having Improved Performance And Reliability.
11348597	7335565	2006-02-07	2008-02-26	Granted	United States of America	Metal\(miOxide Semiconductor Device Having Improved Performance And Reliability.
09083072	6024829	1998-05-21	2000-02-15	Granted	United States of America	Method Of Eliminating Agglomerate Particles In A Polishing Slurry
09427306	6355184	1999-10-26	2002-03-12	Granted	United States of America	A Method Of Eliminating Agglomerate Particles In A Polishing Slurry
09992135	6750145	2001-11-14	2004-06-15	Granted	United States of America	A Method Of Eliminating Agglomerate Particles In A Polishing Slurry
09878657	6482694	2001-06-11	2002-11-19	Granted	United States of America	Semiconductor Device Structure Including A Tantalum Pentoxide Layer Sandwiched Between Silicon Nitride Layers
09259001	6294807	1999-02-26	2001-09-25	Granted	United States of America	Semiconductor Device Structure Including A Tantalum Pentoxide Layer Sandwiched Between Silicon Nitride Layers
09894117	6439972	2001-06-28	2002-08-27	Granted	United States of America	Polishing Fluid, Polishing Method, Semiconductor Device And Semiconductor Device Fabrication Method
09483785	6328633	2000-01-14	2001-12-11	Granted	United States of America	Polishing Fluid, Polishing Method, Semiconductor Device And Semiconductor Device Fabrication Method
09461609	6409829	1999-12-15	2002-06-25	Granted	United States of America	Manufacture Of Dielectrically Isolated Integrated Circuits
10091291	6727567	2002-03-05	2004-04-27	Granted	United States of America	Integrated Circuit Device Substrates With Selective Epitaxial Growth Thickness Compensation
10762962	7276767	2004-01-22	2007-10-02	Granted	United States of America	A Thin Film Resistor Device And A Method Of Manufacture Therefor
09614992	6703666	2000-07-12	2004-03-09	Granted	United States of America	A Thin Film Resistor Device And A Method Of Manufacture Therefor
08347527	6445043	1994-11-30	2002-09-03	Granted	United States of America	Process for Forming Isolation Regions in An Integrated Circuit and Structure Formed Thereby
08620964	5763314	1996-03-22	1998-06-09	Expired	United States of America	Process For Forming Isolation Regions In An Integrated Circuit
08668310	5641994	1996-06-26	1997-06-24	Expired	United States of America	Multilayered Al-alloy Structure For Metal Conductors
08365652	5561083	1994-12-29	1996-10-01	Expired	United States of America	Method of Making Multilayered A1-alloy Structure For Metal Conductors
10750348	6969683	2003-12-31	2005-11-29	Granted	United States of America	Method of preventing resist poisoning in dual damascene structures
10025304	6713386	2001-12-19	2004-03-30	Granted	United States of America	Method of preventing resist poisoning in dual damascene structures
09962641	6495875	2001-09-25	2002-12-17	Granted	United States of America	Method Of Forming Metal Oxide Metal Capacitors Using Multi-Step Rapid Thermal Process And A Device Formed Thereby

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09418106	6323078	1999-10-14	2001-11-27	Granted	United States of America	A Method Of Forming Metal Oxide Metal Capacitors Using Multi-Step Rapid Thermal Process And A Device Formed Thereby
12243137	7713811	2008-10-01	2010-05-11	Lapsed	United States of America	Multiple Doping Level Bipolar Junctions Transistors And Method For Forming
12727304	7910425	2010-03-19	2011-03-22	Granted	United States of America	Multiple Doping Level Bipolar Junctions Transistors And Method For Forming
10953894	7095094	2004-09-29	2006-08-22	Lapsed	United States of America	Multiple Doping Level Bipolar Junctions Transistors And Method For Forming
13026528	8143120	2011-02-14	2012-03-27	Granted	United States of America	Multiple Doping Level Bipolar Junctions Transistors And Method For Forming
11458270	7449388	2006-07-18	2008-11-11	Lapsed	United States of America	Method For Forming Multiple Doping Level Bipolar Junctions Transistors
10953292	7061264	2004-09-29	2006-06-13	Lapsed	United States of America	Test Semiconductor Device And Method For Determining Joule Heating Effects In Such A Device
11403750	7388395	2006-04-13	2008-06-17	Granted	United States of America	Test Semiconductor Device And Method For Determining Joule Heating Effects In Such A Device
09940126	6573149	2001-08-27	2003-06-03	Granted	United States of America	A Semconductor Device Having A Metal Gate With A Work Function Compatible With A Semiconductor Device
10003871	6579775	2001-10-24	2003-06-17	Granted	United States of America	A Semconductor Device Having A Metal Gate With A Work Function Compatible With A Semiconductor Device
09572060	6383879	2000-05-17	2002-05-07	Granted	United States of America	A Semconductor Device Having A Metal Gate With A Work Function Compatible With A Semiconductor Device
09886780	6649422	2001-06-21	2003-11-18	Granted	United States of America	Integrated Circuit Having A Micromagnetic Device And Method Of Manufacture Therefor
09338143	6255714	1999-06-22	2001-07-03	Granted	United States of America	An Integrated Circuit Having A Micromagnetic Device And Method Of Manufacture Therefor
09578082	6465884	2000-05-24	2002-10-15	Granted	United States of America	Semiconductor Device With Variable Pin Locations
10218783	6833286	2002-08-14	2004-12-21	Granted	United States of America	Semiconductor Device With Variable Pin Locations
10038734	6762459	2001-12-31	2004-07-13	Granted	United States of America	Method For Fabricating MOS Device With Halo Implanted Region
09523782	6362054	2000-03-13	2002-03-26	Granted	United States of America	Method For Fabricating MOS Device With Halo Implanted Region
09015981	6153920	1998-01-30	2000-11-28	Expired	United States of America	A Semiconductor Device Configured to Control Dopant Diffusion In the Semiconductor Device Substrate
08862226	5731626	1997-05-23	1998-03-24	Expired	United States of America	Process For Controlling Dopant Diffusion In A Semiconductor Layer And Semiconductor Layer Formed Thereby
08848113	5982020	1997-04-28	1999-11-09	Expired	United States of America	Deuterated Bipolar Transistors And Method Of Manufacture Thereof
09386592	6309938	1999-08-31	2001-10-30	Expired	United States of America	Deuterated Bipolar Transistors And Method Of Manufacture Thereof

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09261346	6153020	1999-03-03	2000-11-28	Granted	United States of America	Process For Fabricating Improved Iron-Cobalt Magnetostrictive Alloy And Article Comprising Alloy
09500855	6299703	2000-02-09	2001-10-09	Granted	United States of America	Process For Fabricating Improved Iron-Cobalt Magnetostrictive Alloy And Article Comprising Alloy
11649197	7670203	2007-01-03	2010-03-02	Lapsed	United States of America	Process For Making An On-Chip Vacuum Tube Device
09651696	7259510	2000-08-30	2007-08-21	Granted	United States of America	On-Chip Vacuum Tube Device And Process For Making Device
08881293	5811796	1997-06-24	1998-09-22	Expired	United States of America	Optical Probe Microscope Having A Fiber Optic Tip That Receives Both A Dither Motion And A Scanning Motion, For Nondestructive Metrology Of Large Sample Surfaces
08657390	5693938	1996-06-03	1997-12-02	Expired	United States of America	Optical Probe Microscope Having A Fiber Optic Tip That Receives Both A Dither Motion And A Scanning Motion, For Nondestructive Metrology Of Large Sample Surfaces
11748569	7407824	2007-05-15	2008-08-05	Granted	United States of America	Guard Ring For Improved Matching
10941665	7253012	2004-09-14	2007-08-07	Granted	United States of America	Guard Ring For Improved Matching
09456224	6576529	1999-12-07	2003-06-10	Granted	United States of America	A Method Of Forming An Alignment Feature In Or On A Multi-Layered Semiconductor Structure
10704449	6977128	2003-11-07	2005-12-20	Lapsed	United States of America	Multi-Layered Semiconductor Structure
09867202	6706609	2001-05-29	2004-03-16	Granted	United States of America	Method Of Forming An Alignment Feature In Or On A Multi-Layered Semiconductor Structure
10360276		2003-02-07		Abandoned	United States of America	Two-Step Oxidation Process For Oxidizing A Silicon Substrate Wherein The First Step Is Carried Out At A Temperature Below The Viscoelastic Temperature Of Silicon Dioxide And The Second Step Is Carried Out At A Temperature Above The Viscoelastic Temperature
09597076	6551946	2000-06-20	2003-04-22	Granted	United States of America	Two-Step Oxidation Process For Oxidizing A Silicon Substrate Wherein The First Step Is Carried Out At A Temperature Below The Viscoelastic Temperature Of Silicon Dioxide And The Second Step Is Carried Out At A Temperature Above The Viscoelastic Temperature
10316386	7148153	2002-12-11	2006-12-12	Granted	United States of America	Process For Oxide Fabrication Using Oxidation Steps Below And Above A Threshold Temperature
11385156	7282461	2006-03-21	2007-10-16	Granted	United States of America	Phase-Shifting Mask And Semiconductor Device
10655050	7053405	2003-09-04	2006-05-30	Lapsed	United States of America	Phase-Shifting Mask And Semiconductor Device
09488662	6638663	2000-01-20	2003-10-28	Granted	United States of America	Phase-Shifting Mask And Semiconductor Device
09533428	6312565	2000-03-23	2001-11-06	Granted	United States of America	Thin Film Deposition Of Mixed Metal Oxides
09917365	6540974	2001-07-27	2003-04-01	Granted	United States of America	Process For Making Mixed Metal Oxides
10819253	7242056	2004-04-05	2007-07-10	Granted	United States of America	Structure And Fabrication Method For Capacitors Integratible With Vertical Replacement Gate Transistors

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11809686	7633118	2007-05-31	2009-12-15	Lapsed	United States of America	Structure And Fabrication Method For Capacitors Integratible With Vertical Replacement Gate Transistors
12319603	7700432	2009-01-09	2010-04-20	Lapsed	United States of America	Method of Fabricating a Vertical Transistor and Capacitor
11809873	7491610	2007-06-01	2009-02-17	Granted	United States of America	Fabrication Method
09956381		2001-09-18		Abandoned	United States of America	An Integratible Vertical Replacement Gate (VRG)-type Poly-Nitride-Poly (PNP) Or Metal-Nitride-poly (MNP) Capacitor
12610733	7911006	2009-11-02	2011-03-22	Granted	United States of America	Structure And Fabrication Method For Capacitors Integratible With Vertical Replacement Gate Transistors
09137920	6215130	1998-08-20	2001-04-10	Granted	United States of America	Thin Film Transistors
09450522	6232157	1999-11-29	2001-05-15	Granted	United States of America	Thin Film Transistors
09280103	6252245	1999-03-29	2001-06-26	Granted	United States of America	Device Comprising N-Channel Semiconductor Material
09476511	6387727	2000-01-03	2002-05-14	Granted	United States of America	Device Comprising N-Channel Semiconductor Material
09276912	6187427	1999-03-27	2001-02-13	Expired	United States of America	Hybrid Inorganic\(miOrganic Composite For Use As An Interlayer Dielectric
08911489	5965202	1997-08-14	1999-10-12	Expired	United States of America	Hybrid Inorganic\(miOrganic Composite For Use As An Interlayer Dielectric
09339895	6320238	1999-06-25	2001-11-20	Granted	United States of America	A Gate Stack Structure For Integrated Circuit Fabrication
08995435	6548854	1997-12-22	2003-04-15	Granted	United States of America	Compound, High-K, Gate And Capacitor Insulator Layer
08872250	6118351	1997-06-10	2000-09-12	Expired	United States of America	A Micromagnetic Device For Power Processing Applications And Method Of Manufacture Therefor
09292860	6191495	1999-04-16	2001-02-20	Expired	United States of America	Micromagnetic Device Having An Anisotropic Ferromagnetic Core and Method of Manufacture Therefor
09511343	6440750	2000-02-23	2002-08-27	Expired	United States of America	Method Of Making Integrated Circuit Having A Micromagnetic Device
10387846	7021518	2003-03-13	2006-04-04	Lapsed	United States of America	Micromagnetic Device For Power Processing Applications And Method Of Manufacture Therefor
09978871	6696744	2001-10-15	2004-02-24	Expired	United States of America	Integrated Circuit Having A Micromagnetic Device And Method Of Manufacture Therefor
09109963	6163234	1998-07-02	2000-12-19	Expired	United States of America	A Micromagnetic Device For Data Transmission Applications And Method Of Manufacture Therefor
09490655	6160721	2000-01-24	2000-12-12	Expired	United States of America	A Micromagnetic Device For Power Processing Applications And Method Of Manufacture Therefor
08718113	5804975	1996-09-18	1998-09-08	Expired	United States of America	Detecting Breakdown In Dielectric Layers
09002497	6043662	1998-01-02	2000-03-28	Expired	United States of America	Detecting Defects In Integrated Circuits
12502057	8097179	2009-07-13	2012-01-17	Granted	United States of America	Arrangement And Method For Abating Effluent From A Process
09942330	7578883	2001-08-29	2009-08-25	Lapsed	United States of America	Arrangement And Method For Abating Effluent From A Process
08353015	5576240	1994-12-09	1996-11-19	Expired	United States of America	Method for Making A Metal to metal Capacitor
08644086	5851870	1996-05-09	1998-12-22	Expired	United States of America	Method For Making A Capacitor

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08472033	5654581	1995-06-06	1997-08-05	Expired	United States of America	Integrated Circuit Capacitor
08909563	6040616	1997-08-12	2000-03-21	Expired	United States of America	A Device and Method of Forming A Metal To Metal Capacitor Within an Integrated Circuit
08863713	5825073	1997-05-27	1998-10-20	Expired	United States of America	An Electronic Component For An Integrated Circuit
09081403	6239491	1998-05-18	2001-05-29	Granted	United States of America	Integrated circuit structure with thin dielectric between at least local interconnect level and first metal interconnect level, and process for making same
09790821	6486056	2001-02-22	2002-11-26	Granted	United States of America	Process for making integrated circuit structure with thin dielectric between at least local interconnect level and first metal interconnect level
09741568	6576404	2000-12-19	2003-06-10	Granted	United States of America	Carbon-doped hard mask and method of passivating structures during semiconductor device fabrication
10405666	6846569	2003-04-02	2005-01-25	Granted	United States of America	Carbon-doped hard mask and method of passivating structures during semiconductor device fabrication
09607169	6541383	2000-06-29	2003-04-01	Granted	United States of America	Apparatus and method for planarizing the surface of a semiconductor wafer
10336444		2003-01-03		Abandoned	United States of America	Apparatus and Method for Planarizing the Surface of a Semiconductor Wafer
09098635	6060370	1998-06-16	2000-05-09	Granted	United States of America	Method for shallow trench isolations with chemical-mechanical polishing
09507042	6424019	2000-02-18	2002-07-23	Granted	United States of America	Shallow trench isolation chemical-mechanical polishing process
09442078	6179956	1999-11-16	2001-01-30	Granted	United States of America	Method and apparatus for using across wafer back pressure differentials to influence the performance of chemical mechanical polishing
09005364	6531397	1998-01-09	2003-03-11	Granted	United States of America	Method and apparatus for using across wafer back pressure differentials to influence the performance of chemical mechanical polishing
08976033	5994211	1997-11-21	1999-11-30	Granted	United States of America	Method and composition for reducing gate oxide damage during RF sputter clean
09251702	6204550	1999-02-17	2001-03-20	Granted	United States of America	Method and composition for reducing gate oxide damage during RF sputter clean
10640778	6943042	2003-08-13	2005-09-13	Lapsed	United States of America	Method of detecting spatially correlated variations in a parameter of an integrated circuit die
10020407	6787379	2001-12-12	2004-09-07	Granted	United States of America	Method of detecting spatially correlated variations in a parameter of an integrated circuit die
08924903	5981352	1997-09-08	1999-11-09	Expired	United States of America	Consistent alignment mark profiles on semiconductor wafers using fine grain tungsten protective layer

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09361684	6060787	1999-07-27	2000-05-09	Expired	United States of America	Consistent alignment mark profiles on semiconductor wafers using fine grain tungsten protective layer
08925200	5966613	1997-09-08	1999-10-12	Expired	United States of America	Consistent alignment mark profiles on semiconductor wafers using metal organic chemical vapor deposition titanium nitride protective
09289828	6157087	1999-04-12	2000-12-05	Expired	United States of America	Consistent alignment mark profiles on semiconductor wafers using metal organic chemical vapor deposition titanium nitride protective layer
10306011	6891219	2002-11-26	2005-05-10	Granted	United States of America	Metal-insulator-metal capacitor formed by damascene processes between metal interconnect layers and method of forming same
09723434	6524926	2000-11-27	2003-02-25	Granted	United States of America	Metal-insulator-metal capacitor formed by damascene processes between metal interconnect layers and method of forming same
08861899		1997-05-22		Abandoned	United States of America	Integrated Circuit With Isolation Of Field Oxidation By Noble Gas Implantation And Method Of Making Such An Integrated Circuit
08479104		1995-06-07		Abandoned	United States of America	Integrated Circuit With Isolation Of Field Oxidation By Nobel Gas Implantation And Method Of Making Such An Integrated Circuit
08641027		1996-04-29		Abandoned	United States of America	Integrated Circuit With Isolation Of Field Oxidation By Noble Gas Implantation And Method Of Making Such An Integrated Circuit.
08918577	6093936	1997-08-19	2000-07-25	Expired	United States of America	Integrated circuit with isolation of field oxidation by noble gas implantation
08701476	5905381	1996-08-22	1999-05-18	Expired	United States of America	Functional OBIC analysis
09244327	6154039	1999-02-03	2000-11-28	Expired	United States of America	Functional OBIC analysis
09526101	6383414	2000-03-15	2002-05-07	Expired	United States of America	Use of corrosion inhibiting compounds to inhibit corrosion of metal plugs in chemical-mechanical polishing
08918360	6068879	1997-08-26	2000-05-30	Expired	United States of America	Use of corrosion inhibiting compounds to inhibit corrosion of metal plugs in chemical-mechanical polishing
08889839	5895267	1997-07-09	1999-04-20	Expired	United States of America	Method to obtain a low resistivity and conformity chemical vapor deposition titanium film
09218780	6297555	1998-12-22	2001-10-02	Expired	United States of America	Method to obtain a low resistivity and conformity chemical vapor deposition titanium film
09388727	6359314	1999-09-02	2002-03-19	Granted	United States of America	Swapped drain structures for electrostatic discharge protection
10026186	6587322	2001-12-20	2003-07-01	Granted	United States of America	Swapped drain structures for electrostatic discharge protection
09177335	6201253	1998-10-22	2001-03-13	Granted	United States of America	Method and apparatus for detecting a planarized outer layer of a semiconductor wafer with a confocal optical system
09754429	6354908	2001-01-04	2002-03-12	Granted	United States of America	Method and apparatus for detecting a planarized outer layer of a semiconductor wafer with a confocal optical system
09863979		2001-05-23		Abandoned	United States of America	Method and Apparatus for Deposition of Porous Silica Dielectrics
09302832	6287987	1999-04-30	2001-09-11	Granted	United States of America	Method and apparatus for deposition of porous silica dielectrics

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10459072	6806162	2003-06-11	2004-10-19	Lapsed	United States of America	Method for composing a dielectric layer within an interconnect structure of a multilayer semiconductor device
09164069	6614097	1998-09-30	2003-09-02	Lapsed	United States of America	Method for composing a dielectric layer within an interconnect structure of a multilayer semiconductor device
09162407	6211555	1998-09-29	2001-04-03	Granted	United States of America	Semiconductor device with a pair of transistors having dual work function gate electrodes
09591108	6514824	2000-06-09	2003-02-04	Granted	United States of America	Semiconductor device with a pair of transistors having dual work function gate electrodes
08954006	6096625	1997-10-20	2000-08-01	Expired	United States of America	Method for improved gate oxide integrity on bulk silicon
08720514		1996-09-30		Abandoned	United States of America	Method for Improved Gate Oxide Integrity on Bulk Silicon
61350494		2010-06-02		Expired	United States of America	CUB eDRAM cell with local Interconnects to reduce stacked contact parasitics Impact
13046973	8283713	2011-03-14	2012-10-09	Granted	United States of America	Logic-Based eDRAM Using Local Interconnects to Reduce Impact of Extension Contact Parasitics
11230188		2005-09-19		Abandoned	United States of America	Shallow Trench Isolation Structures And A Method For Forming Shallow Trench Isolation Structures
11926469	7906407	2007-10-29	2011-03-15	Granted	United States of America	Shallow Trench Isolation Structures And A Method For Forming Shallow Trench Isolation Structures
08430084	5891784	1995-04-27	1999-04-06	Expired	United States of America	Transistor Fabrication Method
08587061	6498080	1996-01-16	2002-12-24	Expired	United States of America	Transistor Fabrication Method
12114589		2008-05-02		Abandoned	United States of America	Transistor Fabrication Method
10224220		2002-08-20		Abandoned	United States of America	Transistor Fabrication Method
12689749	8030199	2010-01-19	2011-10-04	Granted	United States of America	Transistor Fabrication Method
2000079900	3432783	2000-03-22	2003-05-23	Lapsed	Japan	Low Dielectric Constant Multiple Carbon-Containing Silicon Oxide Dielectric Material For Use In Integrated Circuit Structures, And Method Of Making Same
09281602	6204192	1999-03-29	2001-03-20	Granted	United States of America	Plasma cleaning process for openings formed in at least one low dielectric constant insulation layer over copper metallization in integrated circuit structures
2001554123	4831802	2002-07-19	2011-09-30	Lapsed	Japan	Mask Having An Arbitrary Complex Transmission Function
09274457	6303047	1999-03-22	2001-10-16	Granted	United States of America	Low dielectric constant multiple carbon-containing silicon oxide dielectric material for use in integrated circuit structures, and method of making same
09362645	6114259	1999-07-27	2000-09-05	Granted	United States of America	Process for treating exposed surfaces of a low dielectric constant carbon doped silicon oxide dielectric material to protect the material from damage
09233828	6197456	1999-01-19	2001-03-06	Granted	United States of America	Mask having an arbitrary complex transmission function
09207395	6144076	1998-12-08	2000-11-07	Granted	United States of America	Well formation For CMOS devices integrated circuit structures

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1019980025571	537034	1998-06-30	2005-12-09	Lapsed	Korea, Republic of (KR)	Process For Forming MOS Device In Integrated Circuit Structure Using Cobalt Silicide Contacts As Implantation Media
1998068296	4932980	1998-03-18	2012-02-24	Lapsed	Japan	Semiconductor Die Having On-Die Decoupling Capacitance
09121283	6156620	1998-07-22	2000-12-05	Granted	United States of America	Isolation trench in semiconductor substrate with nitrogen-containing barrier region, and process for forming same
09097081	6185706	1998-06-12	2001-02-06	Granted	United States of America	Performance monitoring circuitry for integrated circuits
09321659	6299723	1999-05-28	2001-10-09	Granted	United States of America	Anti-airlock apparatus for filters
09321658	6276379	1999-05-28	2001-08-21	Granted	United States of America	Anti-microbubble deposition apparatus
09266174	6258514	1999-03-10	2001-07-10	Granted	United States of America	Top surface imaging technique using a topcoat delivery system
09340704	4054424	1997-11-26	2007-12-14	Lapsed	Japan	Method And Apparatus Of Fourier Manipulation In An Optic Lens Or Mirror Train
09045738	6130173	1998-03-19	2000-10-10	Granted	United States of America	Reticle based skew lots
1997355616	4620189	1997-12-24	2010-11-05	Granted	Japan	A Novel Method To Improve Uniformity/Planarity On The Edge Die And Also Remove The Tungsten Stringers From Wafer Chemi-Mechanical Polishing
08978979	6043539	1997-11-26	2000-03-28	Granted	United States of America	Electro-static discharge protection of CMOS integrated circuits
09038684	6033998	1998-03-09	2000-03-07	Granted	United States of America	Method of forming variable thickness gate dielectrics
08995875	6218276	1997-12-22	2001-04-17	Granted	United States of America	Silicide encapsulation of polysilicon gate and interconnect
08947742	5953614	1997-10-09	1999-09-14	Expired	United States of America	Process for forming self-aligned metal silicide contacts for MOS structure using single silicide-forming step
08944247	6054062	1997-10-06	2000-04-25	Expired	United States of America	Method and apparatus for agitating an etchant
08899464	6692338	1997-07-23	2004-02-17	Expired	United States of America	Through-pad drainage of slurry during chemical mechanical polishing
08935584	5888121	1997-09-23	1999-03-30	Expired	United States of America	Controlling groove dimensions for enhanced slurry flow
08912597	6093280	1997-08-18	2000-07-25	Expired	United States of America	Chemical-mechanical polishing pad conditioning systems
08924493	5913715	1997-08-27	1999-06-22	Expired	United States of America	Use of hydrofluoric acid for effective pad conditioning
08942006	6234883	1997-10-01	2001-05-22	Expired	United States of America	Method and apparatus for concurrent pad conditioning and wafer buff in chemical mechanical polishing
08921758	5941761	1997-08-25	1999-08-24	Expired	United States of America	Shaping polishing pad to control material removal rate selectively
08837618	5923047	1997-04-21	1999-07-13	Expired	United States of America	Semiconductor die having sacrificial bond pads for die test
08902343	6064220	1997-07-29	2000-05-16	Expired	United States of America	Semiconductor integrated circuit failure analysis using magnetic imaging
08899629	5990789	1997-07-24	1999-11-23	Expired	United States of America	System and method for preventing smoke and fire damage to people and equipment in a clean room area from a fire
08771472	5960305	1996-12-23	1999-09-28	Expired	United States of America	Method to improve uniformity/planarity on the edge die and also remove the tungsten stringers from wafer chemi-mechanical polishing
08940156	5863825	1997-09-29	1999-01-26	Expired	United States of America	Alignment mark contrast enhancement

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08890222	5874342	1997-07-09	1999-02-23	Expired	United States of America	Process for forming MOS device in integrated circuit structure using cobalt silicide contacts as implantation media
08768428	5963566	1996-12-18	1999-10-05	Expired	United States of America	Application specific integrated circuit chip and method of testing same
08727257	5771267	1996-10-08	1998-06-23	Expired	United States of America	Burn-in activity monitor
08840948	6198153	1997-04-21	2001-03-06	Expired	United States of America	Capacitors with silicized polysilicon shielding in digital CMOS process
08710783	5702957	1996-09-20	1997-12-30	Expired	United States of America	Method of making buried metallization structure
08770109	5963801	1996-12-19	1999-10-05	Expired	United States of America	Method of forming retrograde well structures and punch-through barriers using low energy implants
08652999	5646406	1996-05-24	1997-07-08	Expired	United States of America	Stroboscopic photometer
08932614	5994775	1997-09-17	1999-11-30	Expired	United States of America	Metal-filled via/contact opening with thin barrier layers in integrated circuit structure for fast response, and process for making same
08531727	5759921	1995-09-21	1998-06-02	Expired	United States of America	Integrated circuit device fabrication by plasma etching
09873043	6562700	2001-05-31	2003-05-13	Granted	United States of America	Process for removal of resist mask over low k carbon-doped silicon oxide dielectric material of an integrated circuit structure, and removal of residues from via etch and resist mask removal
08655249	5703376	1996-06-05	1997-12-30	Expired	United States of America	Multi-level resolution lithography
08517479	5834821	1995-08-21	1998-11-10	Expired	United States of America	Triangular semiconductor "AND" gate device
08756662	5959776	1996-11-26	1999-09-28	Expired	United States of America	Method and apparatus of Fourier manipulation in an optic lens or mirror train
08630267	5877045	1996-04-10	1999-03-02	Expired	United States of America	Method of forming a planar surface during multi-layer interconnect formation by a laser-assisted dielectric deposition
08501289	5670393	1995-07-12	1997-09-23	Expired	United States of America	Method of making combined metal oxide semiconductor and junction field effect transistor device
09865900	6506670	2001-05-25	2003-01-14	Granted	United States of America	Self aligned gate
08557721	5744399	1995-11-13	1998-04-28	Expired	United States of America	Process for forming low dielectric constant layers using fullerenes
08192228	5681779	1994-02-04	1997-10-28	Expired	United States of America	Method of doping metal layers for electromigration resistance
2012269037	5650185	1999-03-12	2014-11-21	Granted	Japan	Electronic Components With Doped Metal Oxide Dielectric Materials And A Process For Making Electronic Components With Doped Metal Oxide Dielectric Materials
201398165		2013-05-08		Abandoned	Japan	Method To Improve Metal Defects In Semiconductor Device Fabrication
2000245497		2000-08-14		Abandoned	Japan	A Process For Manufacturing An Integrated Circuit Including A Dual-Damascene Structure And An Integrated Circuit
09792685	6858195	2001-02-23	2005-02-22	Lapsed	United States of America	Process for forming a low dielectric constant fluorine and carbon-containing silicon oxide dielectric material

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09703745	6417093	2000-10-31	2002-07-09	Granted	United States of America	Process for planarization of metal-filled trenches of integrated circuit structures by forming a layer of planarizable material over the metal layer prior to planarizing
11323398	7436040	2005-12-29	2008-10-14	Granted	United States of America	Method and apparatus for diverting void diffusion in integrated circuit conductors
11265040	7571397	2005-11-02	2009-08-04	Lapsed	United States of America	Method of Design Based Process Control Optimization
11078179	7641776	2005-03-10	2010-01-05	Granted	United States of America	System and Method for Increasing Yield from Semiconductor Wafer Electroplating
10327283	6867127	2002-12-19	2005-03-15	Granted	United States of America	Diamond metal-filled patterns achieving low parasitic coupling capacitance
10925497	7312880	2004-08-24	2007-12-25	Granted	United States of America	Wafer edge structure measurement method
10226884	7148131	2002-08-23	2006-12-12	Granted	United States of America	Method for implanting ions in a semiconductor
10879629	7198546	2004-06-29	2007-04-03	Granted	United States of America	Method to monitor pad wear in CMP processing
10867003	7039556	2004-06-14	2006-05-02	Lapsed	United States of America	Substrate profile analysis
60140909		1999-06-24		Expired	United States of America	High Quality Oxide For Use In Integrated Circuits
60115762		1999-01-13		Expired	United States of America	Method Of Making A Capacitor
60115842		1999-01-13		Expired	United States of America	Aluminum Barrier Layer For High-IC Dielectric In Capacitors/Gate Application
60052440		1997-07-14		Expired	United States of America	Process For Device Fabrication
60115520		1999-01-12		Expired	United States of America	Damascene Capacitors For Integrated Circuits
60083547		1998-04-29		Expired	United States of America	Process For Fabricating A Lithographic Mask
60077720		1998-03-12		Expired	United States of America	Article Comprising Fluorinated Diamond-Like Carbon And Method For Fabricating Article
60115604		1999-01-12		Expired	United States of America	Integration Of Low Dielectric Material In Semiconductor Circuit Structures
60163230		1999-11-03		Expired	United States of America	Phase Shift Gate Lithography For High-Speed Low Voltage DSPs
09712732	6588437	2000-11-14	2003-07-08	Lapsed	United States of America	System And Method For Removal Of Material
09597077	6492712	2000-06-20	2002-12-10	Granted	United States of America	High Quality Oxide For Use In Integrated Circuits
09298792	6280644	1999-04-23	2001-08-28	Granted	United States of America	Method Of Planarizing A Surface Of An Integrated Circuit
10930544	7230812	2004-08-30	2007-06-12	Granted	United States of America	Predictive Applications For Devices With Thin Dielectric Regions
10219951	6893806	2002-08-15	2005-05-17	Lapsed	United States of America	Multiple Purpose Reticle Layout For Selectively Printing Of Test Circuits
09364767	6291848	1999-07-30	2001-09-18	Granted	United States of America	Integrated Circuit Capacitor Including Anchored Plugs
09250501	6358790	1999-02-16	2002-03-19	Granted	United States of America	Method Of Making A Capacitor
09464811	6657302	1999-12-17	2003-12-02	Granted	United States of America	Integration Of Low K Dielectric Material In Semiconductor Circuit Structures
09385258	6146913	1999-08-30	2000-11-14	Granted	United States of America	Method For Making Enhanced Performance Field Effect Devices

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09432725	6395611	1999-11-01	2002-05-28	Granted	United States of America	An Inductor Or Low Loss Interconnect And A Method Of Manufacturing An Inductor Or Low Loss Interconnect In An Integrated Circuit
09863979		2001-05-23		Abandoned	United States of America	Method and Apparatus for Deposition of Porous Silica Dielectrics
10680047	6797585	2003-10-07	2004-09-28	Granted	United States of America	Nonintrusive wafer marking
09596382	6762087	2000-06-16	2004-07-13	Granted	United States of America	Process For Manufacturing An Integrated Circuit Including A Dual-Damascene Structure And A Capacitor
09603717	6621280	2000-06-27	2003-09-16	Granted	United States of America	A Method of Testing an Integrated Circuit
09754611	6731386	2001-01-04	2004-05-04	Lapsed	United States of America	Measurement Technique For Ultra-Thin Oxides
09405641	6286226	1999-09-24	2001-09-11	Granted	United States of America	Tactile Sensor Comprising Nanowires And Method For Making The Same
09473876	6287952	1999-12-28	2001-09-11	Granted	United States of America	Method Of Etching Self-Aligned Vias To Metal Using A Silicon Nitride Spacer
09364025	6103586	1999-07-30	2000-08-15	Granted	United States of America	Method For Making Integrated Circuit Capacitor Including Anchored Plugs
09259028	6566181	1999-02-26	2003-05-20	Granted	United States of America	Process For The Fabrication Of Dual Gate Structures For CMOS Devices
10634416	7181353	2003-08-04	2007-02-20	Granted	United States of America	Method and apparatus for integrating Six Sigma methodology into inspection receiving process of outsourced subassemblies, parts, and materials: acceptance, rejection, trending, tracking and closed loop corrective action
09323607	6346222	1999-06-01	2002-02-12	Granted	United States of America	Process For Synthesizing A Palladium Replenisher For Electroplating Baths
09293103	6218057	1999-04-16	2001-04-17	Granted	United States of America	A Lithographic Process Having Sub-Wavelength Resolution
08918394	5846871	1997-08-26	1998-12-08	Expired	United States of America	Integrated Circuit Fabrication
09057420	5985493	1998-04-08	1999-11-16	Granted	United States of America	Membrane Mask For Projection Lithography
08977319	5981403	1997-11-24	1999-11-09	Granted	United States of America	Layered Silicon Nitride Deposition Process
09140276	6365469	1998-08-26	2002-04-02	Granted	United States of America	A Method For Forming Dual-Polysilicon Structures Using A Built-In Stop Layer
09092158	6982226	1998-06-05	2006-01-03	Lapsed	United States of America	Method For The Fabrication Of Contacts In An Integrated Circuit Device
09127373	6087683	1998-07-31	2000-07-11	Granted	United States of America	Silicon Germanium Heterostructure Bipolar Transistor With Indium Doped Base
08770535	6107117	1996-12-20	2000-08-22	Expired	United States of America	Method Of Making An Organic Thin Film Transistor
09023220	6136673	1998-02-12	2000-10-24	Granted	United States of America	A Process For Fabricating A Device With Shallow Junctions
08972904	5969421	1997-11-18	1999-10-19	Granted	United States of America	Integrated Circuit Conductors That Avoid Current Crowding
08554501	5885900	1995-11-07	1999-03-23	Expired	United States of America	Method Of Global Planarization In Fabricating Integrated Circuit Devices

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08280429	5529051	1994-07-26	1996-06-25	Expired	United States of America	Method of Preparing Silicon Wafers
08321362	5500312	1994-10-11	1996-03-19	Expired	United States of America	Masks With Low Stress Multilayer Films And A Process For Controlling The Stress Of Multilayer Films
08546078	5663568	1995-10-20	1997-09-02	Expired	United States of America	Apparatus For Controlling A Charged Particle Beam And A Lithographic Process In Which The Apparatus Is Used
08923316	6110831	1997-09-04	2000-08-29	Expired	United States of America	Method Of Mechanical Polishing
08660632	5736281	1996-06-07	1998-04-07	Expired	United States of America	Dose Modification Proximity Effect Compensation (PEC) Technique For Electron Beam Lithography
08388934	5607800	1995-02-15	1997-03-04	Expired	United States of America	Method and Arrangement for Characterizing Micro-Size Patterns
09491644	6472307	2000-01-27	2002-10-29	Granted	United States of America	Method For Improved Encapsulation Of Thick Metal Features In Integrated Circuit Fabrication
10602357	6954705	2003-06-23	2005-10-11	Lapsed	United States of America	Method of screening defects using low voltage IDDQ measurement
90121234	NI-166024	2001-08-28	2003-03-14	Granted	Taiwan	Methods of Fabricating A Metal-Oxide-Metal Capacitor And Associated Apparatus
90114970	NI-182552	2001-06-20	2003-08-01	Lapsed	Taiwan	A Method of Testing an Integrated Circuit
90106474	NI-161626	2001-03-20	2002-12-11	Lapsed	Taiwan	Vertical Replacement Gate (VRG) MOSFET With A Conductive Layer Adjacent A Source/Drain Region And Method Of Manufacture Therefor
88105178	NI-181704	1999-04-01	2003-07-21	Granted	Taiwan	Device And Method For Polishing A Semiconductor Substrate
89101735	NI-162628	2000-02-01	2002-09-11	Lapsed	Taiwan	A Method For Fabricating A Merged Integrated Circuit Device
86118596	NI-116286	1997-12-10	2000-06-21	Lapsed	Taiwan	Method Of Making An Organic Thin Film Transistor
093110399	I332677	2004-04-14	2010-11-01	Granted	Taiwan	Method And Apparatus For Manufacturing Multiple Circuit Patterns Using A Multiple Project Mask
097118239	I376768	2008-05-16	2012-11-11	Granted	Taiwan	Method For Separating A Semiconductor Wafer Into Individual Semiconductor Dies Using An Implanted Inpurity
093108543	I344685	2004-03-29	2011-07-01	Granted	Taiwan	An integrated circuit device and a process for forming the same
1020000071927	704132	2000-11-30	2007-03-30	Lapsed	Korea, Republic of (KR)	Semiconductor Device Having Self-Aligned Contact And Landing PAD Structure And Method Of Forming Same
1020010042929	829404	2001-07-16	2008-05-07	Lapsed	Korea, Republic of (KR)	Electrostatic Discharge Protection Device With Monolithically Formed Resistor-Capacitor Portion
1020010053297	773256	2001-08-31	2007-10-30	Lapsed	Korea, Republic of (KR)	Stacked Structure For Parallel Capacitors And Method Of Fabrication
1020010006759	859674	2001-02-12	2008-09-17	Lapsed	Korea, Republic of (KR)	Method For Producing Devices Having Piezoelectric Films
20010006412	10-0860182	2001-02-09	2008-09-18	Lapsed	Korea, Republic of (KR)	Method For Producing Piezoelectric Films With Rotating Magnetron Sputtering System
1019990035816	572647	1999-08-27	2006-04-13	Lapsed	Korea, Republic of (KR)	Process For Fabricating Vertical Transistors
20000017524	708585	2000-04-04	2007-04-11	Lapsed	Korea, Republic of (KR)	Method For Processing Silicon Workpieces Using Hybrid Optical Thermometer System

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
1020000050713	614782	2000-08-30	2006-08-16	Lapsed	Korea, Republic of (KR)	A Process For Manufacturing An Integrated Circuit Including A Dual-Damascene Structure And An Integrated Circuit
9847146	320163	1998-11-04	2001-12-26	Lapsed	Korea, Republic of (KR)	Method For Using A Hardmask To Form An Opening In A Semiconductor Substrate
9853846	294359	1998-12-09	2001-04-16	Lapsed	Korea, Republic of (KR)	Lithographic Process For Device Fabrication Using A Multilayer Mask Which Has Been Previously Inspected
1019990020699	373193	1999-06-04	2003-02-10	Lapsed	Korea, Republic of (KR)	Method For The Fabrication Of Contacts In An Integrated Circuit Device
9843136	329139	1998-10-15	2002-03-06	Lapsed	Korea, Republic of (KR)	Thin Film Transistor And Organic Semiconductor Material Therefor
9712486	469221	1997-04-04	2005-01-21	Lapsed	Korea, Republic of (KR)	Process For Device Fabrication In Which A Thin Layer Of Cobalt Silicide Is Formed
1020010043828	803643	2001-07-20	2008-02-05	Lapsed	Korea, Republic of (KR)	A Method Of Manufacturing An Integrated Circuit Package
1020000058829	757215	2000-10-06	2007-09-04	Lapsed	Korea, Republic of (KR)	Lens Array For Electron Beam Lithography Tool
1020020084019	10-905210	2002-12-26	2009-06-23	Lapsed	Korea, Republic of (KR)	CMOS Vertical Replacement Gate (VRG) Transistors
963093182	69624326.1	1996-12-19	2002-10-16	Expired	Germany (Federal Republic of)	Polishing Composition for CMP Operations
1020010036899	10-983457	2001-06-27	2010-09-15	Lapsed	Korea, Republic of (KR)	A Method of Testing an Integrated Circuit
11065740	3328600	1999-03-12	2002-07-12	Lapsed	Japan	Process For Fabricating Bipolar And BICMOS Devices
11065741	3378210	1999-03-12	2002-12-06	Granted	Japan	Article Comprising Fluorinated Diamond-Like Carbon And Method For Fabricating Article
11083888	3538335	1999-03-26	2004-03-26	Lapsed	Japan	Mold For Non-Photolithographic Fabrication Of Microstructures
10043609	3768671	1998-02-25	2006-02-10	Lapsed	Japan	Thin Film Tantalum Oxide Capacitors And Resulting Product
09020253	3677137	1997-02-03	2005-05-13	Expired	Japan	Articles Comprising Magnetically Soft Thin Films And Methods For Making Such Articles
2000056110	3753915	2000-03-01	2005-12-22	Granted	Japan	Fabricating High-Q RF Component
2001262994	5090598	2001-08-31	2012-09-21	Granted	Japan	Methods of Fabricating A Metal-Oxide-Metal Capacitor And Associated Apparatus
2001009397	4718021	2001-01-17	2011-04-08	Lapsed	Japan	Method For Making A Semiconductor Device
10315480	6969621	2002-12-09	2005-11-29	Lapsed	United States of America	Contamination distribution apparatus and method
09577912	6506684	2000-05-24	2003-01-14	Granted	United States of America	Anti-corrosion system
10236226	7016041	2002-09-06	2006-03-21	Lapsed	United States of America	Reticle overlay correction
003055712	60042804.4	2000-07-03	2009-08-26	Granted	Germany (Federal Republic of)	Article Comprising A Variable Inductor
003098035	60043148.7	2000-11-06	2009-10-14	Granted	Germany (Federal Republic of)	Process for Forming Device Comprising Micromagnetic Components for Power Applications
993024413	69944291.5	1999-03-29	2012-07-04	Lapsed	Germany (Federal Republic of)	Membrane Mask for Projection Lithography

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
003103058	60039956.7	2000-11-20	2008-08-20	Granted	Germany (Federal Republic of)	Thin Film Transistors
993064468	69909205.1	1999-08-17	2003-07-02	Lapsed	Germany (Federal Republic of)	Process For Fabricating Vertical Transistors
983011545	69800026.9	1998-02-17	1999-10-13	Lapsed	Germany (Federal Republic of)	GaAs-Based MOSFET, And Method Of Making Same
983018037	69832226.6	1998-03-11	2005-11-09	Lapsed	Germany (Federal Republic of)	Semiconductor Device Having Aluminum Contacts Or Vias And Method Of Manufacture Therefor
983005505	69802659.4	1998-01-27	2001-11-28	Granted	Germany (Federal Republic of)	Electronic Apparatus
09669979	6319836	2000-09-26	2001-11-20	Granted	United States of America	Planarization system
973081268	69734047.3	1997-10-14	2005-08-24	Expired	Germany (Federal Republic of)	Article Comprising A Relatively Temperature-Insensitive Ta-Oxide Based Capacitive Element
013007489	60144587.2	2001-01-29	2011-05-11	Granted	Germany (Federal Republic of)	Method For Producing Piezoelectric Films With Rotating Magnetron Sputtering System
09981154	6586332	2001-10-16	2003-07-01	Lapsed	United States of America	Deep submicron silicide blocking
09966651	6736953	2001-09-28	2004-05-18	Granted	United States of America	High frequency electrochemical deposition
09960441	6770505	2001-09-21	2004-08-03	Granted	United States of America	Arrangement for measuring pressure on a semiconductor wafer and an associated method for fabricating a semiconductor wafer
09997071	6767692	2001-11-28	2004-07-27	Granted	United States of America	Process for inhibiting edge peeling of coating on semiconductor substrate during formation of integrated circuit structure thereon
09953706	6524957	2001-09-17	2003-02-25	Lapsed	United States of America	An In\(miSitu Electroplated Oxide Passivating Film For Corrosion Inhibition
10144511	6930006	2002-05-13	2005-08-16	Lapsed	United States of America	Electronic Circuit Structure With Improved Dielectric Properties
2007237928		2007-09-13		Abandoned	Japan	Method For Making A Semiconductor Device
200810210288X	ZL200810210288.X	2004-08-04	2010-07-21	Lapsed	China	A Spiral Inductor Formed In A Semiconductor Substrate And A Method For Forming The Inductor
08865548	5851922	1997-05-29	1998-12-22	Expired	United States of America	Process For Fabricating A Device Using Nitrogen Implantation Into Silicide Layer
11519614	7547560	2006-09-12	2009-06-16	Lapsed	United States of America	Defect Identification System And Method For Repairing Killer Defects In Semiconductor Devices
11673714	7804291	2007-02-12	2010-09-28	Lapsed	United States of America	Semiconductor Test Device With Heating Circuit
09590310	6365528	2000-06-07	2002-04-02	Granted	United States of America	Low temperature process for forming a low dielectric constant fluorine and carbon-containing silicon oxide dielectric-material characterized by improved resistance to oxidation and good gap-filling capabilities
10005097	6624048	2001-12-05	2003-09-23	Lapsed	United States of America	Die attach back grinding

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08869278	6108093	1997-06-04	2000-08-22	Expired	United States of America	Automated inspection system for residual metal after chemical-mechanical polishing
08918293	6168508	1997-08-25	2001-01-02	Expired	United States of America	Polishing pad surface for improved process control
09580106	6355577	2000-05-30	2002-03-12	Granted	United States of America	System to reduce particulate contamination
09471842	6274395	1999-12-23	2001-08-14	Granted	United States of America	Method and apparatus for maintaining test data during fabrication of a semiconductor wafer
09434340	6090651	1999-11-05	2000-07-18	Granted	United States of America	Depletion free polysilicon gate electrodes
09204815	6115232	1998-12-03	2000-09-05	Granted	United States of America	Method for forming an ion implanted electrostatic chuck
09213803	6316276	1998-12-17	2001-11-13	Granted	United States of America	Apparatus and method of planarizing a semiconductor wafer that includes a first reflective substance and a second reflective substance
87102155	109370	1998-02-17	1999-11-11	Granted	Taiwan	Use of MEV Implantation to Form a Vertically Modulated n+ Buried Layer in an NPN Bipolar Transistor
09163623	6069048	1998-09-30	2000-05-30	Granted	United States of America	Reduction of silicon defect induced failures as a result of implants in CMOS and other integrated circuits
08496861	5654537	1995-06-30	1997-08-05	Expired	United States of America	Image sensor array with picture element sensor testability
09281514	6028015	1999-03-29	2000-02-22	Granted	United States of America	Process for treating damaged surfaces of low dielectric constant organo silicon oxide insulation material to inhibit moisture absorption
09322191	6032529	1999-05-28	2000-03-07	Granted	United States of America	Liquid level sensor for buffered hydrofluoric acid
09013510	6124143	1998-01-26	2000-09-26	Granted	United States of America	Process monitor circuitry for integrated circuits
08986537	6097884	1997-12-08	2000-08-01	Granted	United States of America	Probe points and markers for critical paths and integrated circuits
08972231	5978197	1997-11-18	1999-11-02	Granted	United States of America	Testing ESD protection schemes in semiconductor integrated circuits
08960969	5957757	1997-10-30	1999-09-28	Expired	United States of America	Conditioning CMP polishing pad using a high pressure fluid
08900845	5998853	1997-07-25	1999-12-07	Expired	United States of America	Methods and apparatus for electrical marking of integrated circuits to record manufacturing test results
08895659	5816900	1997-07-17	1998-10-06	Expired	United States of America	Apparatus for polishing a substrate at radially varying polish rates
08961382	6074288	1997-10-30	2000-06-13	Expired	United States of America	Modified carrier films to produce more uniformly polished substrate surfaces
08615437	5660682	1996-03-14	1997-08-26	Expired	United States of America	Plasma clean with hydrogen gas
08659860	5736418	1996-06-07	1998-04-07	Expired	United States of America	Method for fabricating a field effect transistor using microtrenches to control hot electron effects
09186793	4041187	1997-07-11	2007-11-16	Expired	Japan	Rapid Thermal Processing Using A Narrowband Infrared Source And Feedback
08690577	6060375	1996-07-31	2000-05-09	Expired	United States of America	Process for forming re-entrant geometry for gate electrode of integrated circuit structure

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08545880	5670892	1995-10-20	1997-09-23	Expired	United States of America	Apparatus and method for measuring quiescent current utilizing timeset switching
08631360	5904551	1996-04-12	1999-05-18	Expired	United States of America	Process for low energy implantation of semiconductor substrate using channeling to form retrograde wells
08396542	5656850	1995-03-01	1997-08-12	Expired	United States of America	Microelectronic integrated circuit including hexagonal semiconductor "AND" gate
08484003	5682047	1995-06-07	1997-10-28	Expired	United States of America	Input-output (I/O) structure with capacitively triggered thyristor for electrostatic discharge (ESD) protection
09844352	6767832	2001-04-27	2004-07-27	Granted	United States of America	In situ liner barrier
003025905	60012807.5	2000-03-29	2004-08-11	Lapsed	Germany (Federal Republic of)	Plasma Cleaning Process for Openings Formed in One or More Low Dielectric Constant Insulation Layers Over Copper Metallization In Integrated Circuit Structures
08613161	5795682	1996-03-08	1998-08-18	Expired	United States of America	Guard rings to compensate for side lobe ringing in attenuated phase shift reticles
08531659	5662768	1995-09-21	1997-09-02	Expired	United States of America	High surface area trenches for an integrated ciruit device
08481799	5667433	1995-06-07	1997-09-16	Expired	United States of America	Keyed end effector for CMP pad conditioner
09872058	6583026	2001-05-31	2003-06-24	Granted	United States of America	Process for forming a low k carbon-doped silicon oxide dielectric material on an integrated circuit structure
201313971	5580439	2007-05-17	2014-07-18	Lapsed	Japan	Method For Separating A Semiconductor Wafer Into Individual Semiconductor Dies Using An Implanted Inpurity
09870851	6559048	2001-05-30	2003-05-06	Granted	United States of America	Method of making a sloped sidewall via for integrated circuit structure to suppress via poisoning
1020130112914	10-1351293	2013-09-23	2014-01-08	Granted	Korea, Republic of (KR)	Method To Improve Metal Defects In Semiconductor Device Fabrication
08626776	5789783	1996-04-02	1998-08-04	Expired	United States of America	Multilevel metallization structure for integrated circuit I/O lines for increased current capacity and ESD protection
08579383	5956613	1995-12-27	1999-09-21	Expired	United States of America	Method for improvement of TiN CVD film quality
20133034	5579280	2013-01-11	2014-07-18	Lapsed	Japan	CMOS Vertical Replacement Gate (VRG) Transistors
08632550	5890951	1996-04-15	1999-04-06	Expired	United States of America	Utility wafer for chemical-mechanical planarization
09888302	6747464	2001-06-21	2004-06-08	Granted	United States of America	Wafer holder for backside viewing, frontside probing on automated wafer probe stations
08578118	5776831	1995-12-27	1998-07-07	Expired	United States of America	Method of forming a high electromigration resistant metallization system
09605382	6346488	2000-06-27	2002-02-12	Granted	United States of America	Process to provide enhanced resistance to cracking and to further reduce the dielectric constant of a low dielectric constant dielectric film of an integrated circuit structure by implantation with hydrogen ions

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
001226844		2000-10-18		Lapsed	European Patent	Low K Dielectric Composite Layer for Integrated Circuit Structure Which Provides Void-Free Low K Dielectric Material Between Metal Lines While Mitigating Via Poisoning
94124738	I364081	2005-07-21	2012-05-11	Granted	Taiwan	Failure Analysis Vehicle for Yield Enhancement with Self Test at Speed Burnin Capability for Reliability Testing
09725631	6556021	2000-11-29	2003-04-29	Granted	United States of America	Device frequency measurement system
003000437		2000-01-06		Application	European Patent	Damascene Capacitors For Integrated Circuits
09212450	6329720	1998-12-16	2001-12-11	Granted	United States of America	Tungsten local interconnect for silicon integrated circuit structures, and method of making same
2005100882101	ZL200510088210.1	2005-07-25	2010-06-23	Granted	China	Self-Timed Reliability and Yield Vehicle with Gated Data and Clock
094119790	I369504	2005-06-15	2012-08-01	Granted	Taiwan	Self-Timed Reliability and Yield Vehicle with Gated Data and Clock
102102447	I418017	2004-06-29	2013-12-01	Granted	Taiwan	A Spiral Inductor Formed In A Semiconductor Substrate And A Method For Forming The Inductor
11184621	7216279	2005-07-19	2007-05-08	Granted	United States of America	Testing with high speed pulse generator
2000319053	4731670	2000-10-19	2011-04-28	Lapsed	Japan	Low K Dielectric Composite Layer for Integrated Circuit Structure Which Provides Void-Free Low K Dielectric Material Between Metal Lines While Mitigating Via Poisoning
2011236296		2011-10-27		Abandoned	Japan	Aluminum Pad Power Bus And Signal Routing For Integrated Circuit Devices Utilizing Copper Technology Interconnect Structures
11071903	7094687	2005-03-02	2006-08-22	Granted	United States of America	Reduced dry etching lag
11046949	7553772	2005-01-31	2009-06-30	Lapsed	United States of America	Process And Apparatus For Simultaneous Light And Radical Surface Treatment Of Integrated Circuit Structure
10955168	7069178	2004-09-29	2006-06-27	Lapsed	United States of America	Method of predicting quiescent current variation of an integrated circuit die from a process monitor derating factor
11072158	7341978	2005-03-04	2008-03-11	Granted	United States of America	Superconductor wires for back end interconnects
11266133	7327011	2005-11-02	2008-02-05	Granted	United States of America	Multi-surfaced plate-to-plate capacitor and method of forming same
201010115825X	ZL 201010115825.X	2004-08-04	2011-12-28	Lapsed	China	A Spiral Inductor Formed In A Semiconductor Substrate And A Method For Forming The Inductor
09918183	6710616	2001-07-30	2004-03-23	Granted	United States of America	Wafer level dynamic burn-in
60135564		1999-05-24		Expired	United States of America	Low Temperature Tungsten Deposition
60462504		2003-04-10		Expired	United States of America	Aluminum Pad Power Bus In A Copper Technology
60115526		1999-01-12		Expired	United States of America	Stacked High-K Dielectric Capacitor For Dual Damascene Structure
11078830	7482642	2005-03-11	2009-01-27	Lapsed	United States of America	Bipolar Transistors having Controllable Temperature Coefficient of Current Gain
2005100927070	ZL200510092707.0	2005-08-18	2009-10-07	Granted	China	Failure Analysis Vehicle for Yield Enhancement with Self Test at Speed Burning Capability for Reliability Testing
60115781		1999-01-13		Expired	United States of America	Novel Method Of Making EDRAM Capacitor

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
60075293		1998-02-20		Expired	United States of America	A Process For Device Fabrication Using A Variable Transmission Aperture
10927985	7015569	2004-08-26	2006-03-21	Lapsed	United States of America	Method and apparatus for implementing a co-axial wire in a semiconductor chip
10944996	7799166	2004-09-20	2010-09-21	Lapsed	United States of America	Wafer Edge Expose Alignment Method
60165542		1999-11-15		Expired	United States of America	System And Method For Removal Of Material
60168911		1999-12-03		Expired	United States of America	CMOS With Metal Gates By Work Function Engineering
60158268		1999-10-07		Expired	United States of America	Electron Beam Imaging Apparatus
60301295		2001-06-28		Expired	United States of America	Full Via First Integration Method Of Manufacture
10945177	7154734	2004-09-20	2006-12-26	Granted	United States of America	Fully shielded capacitor cell structure
60520265		2003-11-14		Expired	United States of America	Control Of Hot Carrier Degradation In LDMOS Devices By A Dummy Gate Field Plate
60197283		2000-04-14		Expired	United States of America	Novel Method Of Coil Preparation For Ionized Metal Plasma Processes
09560935	6365426	2000-04-30	2002-04-02	Granted	United States of America	Method Of Determining The Impact Of Plasma-Charging Damage On Yield And Reliability In Submicron Integrated Circuits
09972482	6639298	2001-10-05	2003-10-28	Granted	United States of America	A Multi-Layer Inductor Formed In A Semicondutor Substrate
09243047	6259149	1999-02-03	2001-07-10	Granted	United States of America	Fully\(milsolated Thin\(miFilm Trench Capacitor
60141348		1999-06-28		Expired	United States of America	Impact Of Plasma-Charging Damage On Yield And Reliability In Deep Submicron CMOS VLSI Circuits
2009234206	5479839	2009-10-08	2014-02-21	Lapsed	Japan	Architecture for Circuit Connection of a Vertical Transistor
09334491	6309932	1999-06-16	2001-10-30	Granted	United States of America	Process For Forming A Plasma Nitride Film Suitable For Gate Dielectric Application In Sub\(mi0.25 \(*mm Technologies
09121266	6051346	1998-07-23	2000-04-18	Granted	United States of America	Process For Fabricating A Lithographic Mask
1020090066235	10-929335	2009-07-21	2009-11-24	Granted	Korea, Republic of (KR)	Vertical Replacement-Gate Junction Field-Effect Transistor
60115785		1999-01-13		Expired	United States of America	Tapered Plug For EDRAM/Capacitor Application
09190351	6015644	1998-11-12	2000-01-18	Granted	United States of America	Process For Device Fabrication Using A Variable Transmission Aperture
2009038940		2009-02-23		Abandoned	Japan	A Process For Manufacturing An Integrated Circuit Including A Dual-Damascene Structure And An Integrated Circuit
2009032389	5334616	2009-02-16		Granted	Japan	A Process For Manufacturing An Integrated Circuit Including A Dual-Damascene Structure And An Integrated Circuit
11189217	7763908	2005-07-25	2010-07-27	Lapsed	United States of America	Design Of Silicon-Controlled Rectifier By Considering Electrostatic Discharge Robustness In Human-Body Model And Charged-Device Model Devices
60088157		1998-06-05		Expired	United States of America	Method Of Planarizing A Surface Of An Integrated Circuit
60096407		1998-08-13		Expired	United States of America	Yield Improvement Via Automatic Analysis Of Wafer Processing Order

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09365059	6504292	1999-07-30	2003-01-07	Granted	United States of America	Field Emitting Device Comprising Metallized Nanostructures And Method For Making The Same
09943196	7601643	2001-08-30	2009-10-13	Lapsed	United States of America	Use of Non Aqueous Solvents in Low k CMP
60098431		1998-08-31		Expired	United States of America	Method For Making Enhanced Performance Field Effect Devices
60174549		2000-01-05		Expired	United States of America	An Integrated Circuit And A Method Of Making An Integrated Circuit
60524341		2003-11-21		Expired	United States of America	Method Of Determining The Reliability Of Semiconductor Devices Having Thin Gate Oxides
10969745	7171638	2004-10-20	2007-01-30	Granted	United States of America	Methods of screening ASIC defects using independent component analysis of quiescent current measurements
09755828	7638380	2001-01-04	2009-12-29	Lapsed	United States of America	Method for Manufacturing a Laterally Diffused Metal Oxide Semiconductor Device
1020097023840	10-1122521	2007-05-17	2012-02-24	Lapsed	Korea, Republic of (KR)	Method For Separating A Semiconductor Wafer Into Individual Semiconductor Dies Using An Implanted Inpurity
09842214	6969472	2001-04-25	2005-11-29	Lapsed	United States of America	Method of fabricating sub-micron hemispherical and hemicylidrical structures from non-spherically shaped templates
09591626	6420714	2000-06-09	2002-07-16	Granted	United States of America	Electron Beam Imaging Apparatus
2010508351		2007-05-17		Abandoned	Japan	Method For Separating A Semiconductor Wafer Into Individual Semiconductor Dies Using An Implanted Inpurity
10505198	7342225	2005-03-02	2008-03-11	Granted	United States of America	Crystallographic Metrology And Process Control
09364603	6249016	1999-07-30	2001-06-19	Granted	United States of America	Integrated Circuit Capacitor Including Tapered Plug
60128937		1999-04-13		Expired	United States of America	A Method For Matching Thin Film Thickness Measurement Tools
60144547		1999-07-15		Expired	United States of America	Field Emitting Device Comprising Metalized Nanostructures And Method For Making The Same
60143691		1999-07-14		Expired	United States of America	Buried In Glass Silicon Tantalum Integrated Circuit (BIG STIC)
60106945		1998-11-04		Expired	United States of America	An Inductor Or Low Loss Interconnect And A Method Of Manufacturing An Inductor Or Low Loss Interconnect In An Integrated Circuit
60116042		1999-01-14		Expired	United States of America	A Plasma Nitride Process Suitable For Gate Dielectric Application In Sub\(mi0.25 \(*mm Technologies
08943585	5904523	1997-10-03	1999-05-18	Expired	United States of America	Process For Device Fabrication In Which A Layer Of Oxynitride Is Formed At Low Temperatures
60028049		1996-10-03		Expired	United States of America	A Process For Device Fabrication
09205840	6312766	1998-12-04	2001-11-06	Granted	United States of America	Article Comprising Fluorinated Diamond-Like Carbon And Method For Fabricating Article
09211481	6336086	1998-12-14	2002-01-01	Granted	United States of America	Method And System For Analyzing Wafer Processing Order
60116122		1999-01-15		Expired	United States of America	PMOS Device Having A Layered Silicon Gate For Improved Silicide Integrity And Enhanced Boron Penetration Resistance

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
60043235		1997-04-11		Expired	United States of America	A Process For Forming Patterned Dielectric Oxide Films
10696320	7190185	2003-10-29	2007-03-13	Granted	United States of America	Methodology to measure many more transistors on the same test area
09056133	5976625	1998-04-07	1999-11-02	Granted	United States of America	Process For Forming Patterned Dielectric Oxide Films
60033839		1996-12-23		Expired	United States of America	Compound, High K, Gate And Capacitor Insulator Layer
60115718		1999-01-12		Expired	United States of America	Mask And Implant Savings For Dual Voltage CMOS Technologies
60592153		2004-07-29		Expired	United States of America	Method Of Electrical Probing
09481463	6403415	2000-01-11	2002-06-11	Granted	United States of America	A Semiconductor Device Having A Metal Barrier Layer For A Dielectric Material Having A High Dielectric Constant And A Method Of Manufacture Thereof
60756056		2006-01-04		Expired	United States of America	Formation Of An Integrated Circuit Structure With Reduced Dishing In Metallization Levels
09704635	6420277	2000-11-01	2002-07-16	Granted	United States of America	Process for inhibiting crack formation in low dielectric constant dielectric films of integrated circuit structure
60091896		1998-07-07		Expired	United States of America	Fully\(miIsolated Thin\(miFilm Trench Capacitor
60312389		2001-08-15		Expired	United States of America	Multiple Purpose Reticle Layout For Selectively Printing
12618936	8119501	2009-11-16	2012-02-21	Granted	United States of America	Method For Separating A Semiconductor Wafer Into Individual Semiconductor Dies Using An Implanted Inpurity
10610002	7581203	2003-06-30	2009-08-25	Lapsed	United States of America	Method And Apparatus For Manufacturing Multiple Circuit Patterns Using A Multiple Project Mask
09836365	6699372	2001-04-16	2004-03-02	Granted	United States of America	Method Of Coil Preparation For Ionized Metal Plasma Process And Method Of Manufacturing Integrated Circuits
09586586	6720261	2000-06-02	2004-04-13	Granted	United States of America	Method And System For Eliminating Extrusions In Semiconductor Vias
2007800530078		2007-05-17		Abandoned	China	Method For Separating A Semiconductor Wafer Into Individual Semiconductor Dies Using An Implanted Impurity
2015105007177		2007-05-17		Application	China	Method For Separating A Semiconductor Wafer Into Individual Semiconductor Dies Using An Implanted Impurity
09630463	6537867	2000-08-02	2003-03-25	Granted	United States of America	High Speed Low Voltage Semiconductor Devices And Method Of Fabrication
09363769	6207510	1999-07-29	2001-03-27	Granted	United States of America	Method For Making An Integrated Circuit Including High And Low Voltage Transistors
09292422	6271596	1999-04-15	2001-08-07	Granted	United States of America	Damascene Capacitors For Integrated Circuits
10950839	7183181	2004-09-27	2007-02-27	Granted	United States of America	Dynamic edge bead removal
09897517	6680243	2001-06-29	2004-01-20	Granted	United States of America	Shallow junction formation
09967094	7071563	2001-09-28	2006-07-04	Lapsed	United States of America	A Barrier Layer For Interconnect Structures Of A Semiconductor Wafer And Method For Depositing The Barrier Layer
09466285	6303397	1999-12-17	2001-10-16	Granted	United States of America	Method For Benchmarking Thin Film Measurement Tools

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09388682	6320244	1999-09-02	2001-11-20	Granted	United States of America	Integrated Circuit Device Having Dual Damascene Capacitor
09517965	6294468	2000-03-03	2001-09-25	Granted	United States of America	Method Of Chemical Vapor Depositing Tungsten Films
09339894	6303940	1999-06-25	2001-10-16	Granted	United States of America	Charge Injection Transistor Using High-K Dielectrics Barrier Layer
09416491	6313021	1999-10-12	2001-11-06	Granted	United States of America	PMOS Device Having A Layered Silicon Gate For Improved Silicide Integrity And Enhanced Boron Penetration Resistance
09340224	6235594	1999-06-25	2001-05-22	Granted	United States of America	Methods Of Fabricating An Integrated Circuit Device With Composite Oxide Dielectric
09364858	6440852	1999-07-30	2002-08-27	Granted	United States of America	Integrated Circuit Including Passivated Copper Interconnection Lines And Associated Manufacturing Methods
10260727	7005375	2002-09-30	2006-02-28	Granted	United States of America	Method To Avoid Copper Contamination Of A Via Or Dual Damascene Structure
10675258	7566964	2003-09-30	2009-07-28	Granted	United States of America	Aluminum Pad Power Bus And Signal Routing For Integrated Circuit Devices Utilizing Copper Technology Interconnect Structures
10614776	6881664	2003-07-07	2005-04-19	Granted	United States of America	Process for planarizing upper surface of damascene wiring structure for integrated circuit structures
09364208	6169010	1999-07-30	2001-01-02	Granted	United States of America	Method For Making Integrated Circuit Capacitor Including Anchored Plug
10696203	7114143	2003-10-29	2006-09-26	Lapsed	United States of America	Process yield learning
10661013	7013222	2003-09-12	2006-03-14	Lapsed	United States of America	Wafer edge inspection data gathering
09354711	6184755	1999-07-16	2001-02-06	Granted	United States of America	Article Comprising A Variable Inductor
09412089	6430047	1999-10-04	2002-08-06	Granted	United States of America	Standardized Test Board For Testing Custom Chips
09648164	6903411	2000-08-25	2005-06-07	Granted	United States of America	Architecture For Circuit Connection Of A Vertical Transistor
09042388	6121101	1998-03-12	2000-09-19	Granted	United States of America	Process For Fabricating Bipolar And BICMOS Devices
10697507	7084408	2003-10-29	2006-08-01	Lapsed	United States of America	Vaporization and ionization of metals for use in semiconductor processing
08963687	6008123	1997-11-04	1999-12-28	Granted	United States of America	Method For Using A Hardmask To Form An Opening In A Semiconductor Substrate
10036020	6773994	2001-12-26	2004-08-10	Granted	United States of America	CMOS Vertical Replacement Gate (VRG) Transistors
08936132	5912797	1997-09-24	1999-06-15	Expired	United States of America	Dielectric Materials Of Amorphous Compositions And Devices Employing Same
10121370	6899596	2002-04-12	2005-05-31	Lapsed	United States of America	Chemical Mechanical Polishing Of Dual Orientation Polycrystalline Materials
10627289	6958541	2003-07-25	2005-10-25	Lapsed	United States of America	Low gate resistance layout procedure for RF transistor devices
09515730	6599837	2000-02-29	2003-07-29	Granted	United States of America	Chemical Mechanical Polishing Composition And Method Of Polishing Metal Layers Using Same
09384395	6368753	1999-08-27	2002-04-09	Granted	United States of America	Mask Repair
09220417	6110012	1998-12-24	2000-08-29	Granted	United States of America	Chemical-Mechanical Polishing Apparatus And Method

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
10920656	7087959	2004-08-18	2006-08-08	Lapsed	United States of America	Metal-Oxide-Semiconductor Device Having An Enhanced Shielding Structure
08804782	5903037	1997-02-24	1999-05-11	Expired	United States of America	GaAs-Based MOSFET, And Method Of Making Same
09386065	6365327	1999-08-30	2002-04-02	Granted	United States of America	A Process For Manufacturing An Integrated Circuit Including A Dual-Damascene Structure And An Integrated Circuit
09384459	6225639	1999-08-27	2001-05-01	Granted	United States of America	Method Of Monitoring A Patterned Transfer Process Using Line Width Metrology
09034079	5955381	1998-03-03	1999-09-21	Granted	United States of America	Integrated Circuit Fabrication
10628614	7968859	2003-07-28	2011-06-28	Granted	United States of America	Wafer edge defect inspection using captured image analysis
09339085	6071808	1999-06-23	2000-06-06	Granted	United States of America	Method Of Passivating Copper Interconnects In A Semiconductor
10953478	7176781	2004-09-29	2007-02-13	Granted	United States of America	Structure And Method For Adjusting Integrated Circuit Resistor Value
10679004	6982206	2003-10-02	2006-01-03	Granted	United States of America	Mechanism for improving the structural integrity of low-k films
09451078	6206054	1999-11-30	2001-03-27	Granted	United States of America	Automatic Compound Shaking Machine
09174503	6363606	1998-10-16	2002-04-02	Granted	United States of America	Process For Forming Integrated Structures Using Three Dimensional Printing Techniques
10628986	6986112	2003-07-28	2006-01-10	Lapsed	United States of America	Method of mapping logic failures in an integrated circuit die
08946413	5989984	1997-10-07	1999-11-23	Expired	United States of America	Method of Using A Getter Layer To Improve Metal To Metal Contact Resistance At Low Radio Frequency Power
09650606	6458669	2000-08-30	2002-10-01	Granted	United States of America	Method of Manufacturing An Integrated Circuit
08346706	5534721	1994-11-30	1996-07-09	Expired	United States of America	Area-Efficient Layout For High Voltage Lateral Devices
08323945	5541402	1994-10-17	1996-07-30	Expired	United States of America	Imaging Active Pixel Device Having A Non-Destructive Read-Out Gate
09653295	6838717	2000-08-31	2005-01-04	Granted	United States of America	Stacked Structure For Parallel Capacitors And Method Of Fabrication
08299470	5504385	1994-08-31	1996-04-02	Expired	United States of America	Spaced-Gate Emission Device And Method For Making Same
08560671	5744840	1995-11-20	1998-04-28	Expired	United States of America	Electrostatic Protection Devices For Protecting Semiconductor Integrated Circuitry
08987491	6042995	1997-12-09	2000-03-28	Granted	United States of America	Lithographic Process For Device Fabrication Using A Multilayer Mask Which Has Been Previously Inspected
08951779	5936259	1997-10-16	1999-08-10	Expired	United States of America	Thin Film Transistor And Organic Semiconductor Material Therefor
09604519	6833557	2000-06-27	2004-12-21	Lapsed	United States of America	Integrated Circuit And A Method Of Manufacturing An Integrated Circuit
08586412	5891605	1996-01-16	1999-04-06	Expired	United States of America	Reduction In Damage To Optical Elements Used In Optical Lithography For Device Fabrication
09617687	6384452	2000-07-17	2002-05-07	Granted	United States of America	Electrostatic Discharge Protection Device With Monolithically Formed Resistor-Capacitor Portion
09250500	6720604	1999-02-16	2004-04-13	Granted	United States of America	Capacitor For An Integrated Circuit

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10675263	7078337	2003-09-30	2006-07-18	Lapsed	United States of America	Selective Isotropic Etch For Titanium Based Materials
08692836	5863843	1996-07-31	1999-01-26	Expired	United States of America	Wafer Holder For Thermal Processing Apparatus
09448349	6245692	1999-11-23	2001-06-12	Granted	United States of America	Method To Selectively Heat Semiconductor Wafers
09337741	6448569	1999-06-22	2002-09-10	Granted	United States of America	Bonded Article Having Improved Crystalline Structure And Work Function Uniformity And Method For Making The Same
08724128	5843827	1996-09-30	1998-12-01	Expired	United States of America	Method Of Reducing Dielectric Damage From Plasma Etch Charging
09009399	6197699	1998-01-20	2001-03-06	Granted	United States of America	Insitu Dry Cleaning Process For Poly Gate Etch
08627560	5728625	1996-04-04	1998-03-17	Expired	United States of America	Process For Device Fabrication In Which A Thin Layer Of Cobalt Silicide Is Formed
09385165	6313025	1999-08-30	2001-11-06	Granted	United States of America	A Process For Manufacturing An Integrated Circuit Including A Dual-Damascene Structure And An Integrated Circuit
09286929	6830942	1999-04-06	2004-12-14	Granted	United States of America	Method For Processing Silicon Workpieces Using Hybrid Optical Thermometer System
09379055	6674151	1999-08-23	2004-01-06	Granted	United States of America	Deuterium Passivated Semiconductor Device Having Enhanced Immunity To Hot Carrier Effects
09413742	6458289	1999-10-06	2002-10-01	Granted	United States of America	CMP Slurry For Polishing Semiconductor Wafers And Related Methods
09430226	6180518	1999-10-29	2001-01-30	Granted	United States of America	Method For Forming Vias in a Low Dielectric Constant Material
09540618	6573818	2000-03-31	2003-06-03	Granted	United States of America	Planar Magnetic Frame Inductors Having Open Cores
09451054	6483144	1999-11-30	2002-11-19	Granted	United States of America	Semiconductor Device Having Self-Aligned Contact And Landing PAD Structure And Method Of Forming Same
08735170	5754392	1996-10-22	1998-05-19	Expired	United States of America	Article Comprising A Relatively Temperature-Insensitive Ta-Oxide Based Capacitive Element
08366192	5559052	1994-12-29	1996-09-24	Expired	United States of America	Integrated Circuit with Interlevel Dielectric
08566766	5620909	1995-12-04	1997-04-15	Expired	United States of America	Method of Depositing Thin Passivating Film on Microminiature Semiconductor Devices
09354928	6322713	1999-07-15	2001-11-27	Granted	United States of America	Nanoscale Conductive Connectors And Method For Making Same
08295303	5461245	1994-08-24	1995-10-24	Expired	United States of America	Article Comprising A Bipolar Transistor With Floating Base
09152185	6242989	1998-09-12	2001-06-05	Granted	United States of America	Article Comprising A Multiport Variable Capacitor
08531115	5711891	1995-09-20	1998-01-27	Expired	United States of America	Wafer Processing Using Thermal Nitride Etch Mask
08176600	5438006	1994-01-03	1995-08-01	Expired	United States of America	Method of Fabricating Gate Stack Having a Reduced Height
07815316	5880022	1991-12-30	1999-03-09	Expired	United States of America	Self-Aligned Contact Window
08977318	6147388	1997-11-24	2000-11-14	Granted	United States of America	Polycide Gate Structure With Intermediate Barrier
08595543	5780175	1996-02-02	1998-07-14	Expired	United States of America	Articles Comprising Magnetically Soft Thin Films And Methods For Making Such Articles
08326449	5521031	1994-10-20	1996-05-28	Expired	United States of America	Pattern Delineating Apparatus For Use In The EUV Spectrum
08856561	6316950	1997-05-15	2001-11-13	Expired	United States of America	Method And Apparatus For Imaging Semiconductor Devices
08299701	5510007	1994-08-31	1996-04-23	Expired	United States of America	Electrochemical Generation Of Silane

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09080992	6051500	1998-05-19	2000-04-18	Granted	United States of America	Device And Method For Polishing A Semiconductor Substrate
08754607	5728607	1996-11-20	1998-03-17	Expired	United States of America	Method Of Making A P-Channel Bipolar Transistor
08565286	5688704	1995-11-30	1997-11-18	Expired	United States of America	Integrated Circuit Fabrication
08538318	5658485	1995-10-03	1997-08-19	Expired	United States of America	Pyrochlore Based Oxides With High Dielectric Constant and Low Temperature Coefficient
08391905	5656182	1995-02-21	1997-08-12	Expired	United States of America	A Process For Fabricating A Device In Which The Process Is Controlled By Near-Field Imaging Latent Features Introduced Into Energy Sensitive Resist Materials
08451283	5948570	1995-05-26	1999-09-07	Expired	United States of America	Process For Dry Lithographic Etching
08505047	5527425	1995-07-21	1996-06-18	Expired	United States of America	Method Of Making In-Containing III/V Semiconductor Devices
08769605	6020256	1996-12-18	2000-02-01	Expired	United States of America	Method of Integrated Circuit Fabrication
08570906	5625140	1995-12-12	1997-04-29	Expired	United States of America	Acoustic Analysis Of Gas Mixtures
08359309	5559360	1994-12-19	1996-09-24	Expired	United States of America	Inductor for High Frequency Circuits
08118109	5838033	1993-09-08	1998-11-17	Expired	United States of America	Integrated Circuit with Gate Conductor Defined Resistor
09503225	6342134	2000-02-11	2002-01-29	Granted	United States of America	Method For Producing Piezoelectric Films With Rotating Magnetron Sputtering System
09450525	6136702	1999-11-29	2000-10-24	Granted	United States of America	Thin Film Transistors
09513390	6406609	2000-02-25	2002-06-18	Granted	United States of America	A Method Of Fabricating An Integrated Circuit
09567675	6603119	2000-05-09	2003-08-05	Granted	United States of America	Calibration Method For Quantitative Elemental Analysis
09551050	6399413	2000-04-18	2002-06-04	Granted	United States of America	Self Alignbed Gated Schottky Diode Guard Ring Structures
09432926	6358359	1999-11-03	2002-03-19	Granted	United States of America	Apparatus for Detecting Plasma Etch Endpoint In Semiconductor Fabrication And Associated Method
09543808	6429040	2000-04-06	2002-08-06	Granted	United States of America	Device Comprising Bipolar Semi-Conducting Film
09484759	6274409	2000-01-18	2001-08-14	Granted	United States of America	Method For Making A Semiconductor Device
09553931	6726537	2000-04-21	2004-04-27	Granted	United States of America	Polishing Carrier Head
09488355	6436608	2000-01-20	2002-08-20	Granted	United States of America	Lithographic Method Utilizing A Phase-Shifting Mask
09996118	6815342	2001-11-27	2004-11-09	Granted	United States of America	Low resistance metal interconnect lines and a process for fabricating them
89112402	NI-198319	2000-09-20	2004-03-21	Lapsed	Taiwan	High Quality Oxide For Use In Integrated Circuits
89108620	NI-203326	2000-07-15	2004-06-11	Lapsed	Taiwan	Electron Emitters for Lithography Tools
91119023	NI-185928	2002-08-22	2004-01-14	Lapsed	Taiwan	CMOS Vertical Replacement Gate (VRG) Transistors
88119230	NI-186701	2000-02-18	2003-09-01	Granted	Taiwan	An Inductor Or Low Loss Interconnect And A Method Of Manufacturing An Inductor Or Low Loss Interconnect In An Integrated Circuit
89109253	NI-172855	2000-05-15	2003-03-01	Lapsed	Taiwan	Charge Injection Transistor Using High-K Dielectrics Barrier Layer
89109252	NI-145230	2000-05-15	2001-12-01	Granted	Taiwan	A Gate Stack Structure For Integrated Circuit Fabrication
89100250	NI-155124	2000-01-10	2002-05-11	Lapsed	Taiwan	Damascene Capacitors For Integrated Circuits
88102935	NI-138362	1999-02-26	2001-08-11	Lapsed	Taiwan	Integrated Circuit Fabrication

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
11427494	7982286	2006-06-29	2011-07-19	Granted	United States of America	Method To Improve Metal Defects In Semiconductor Device Fabrication
10691938	6870386	2003-10-23	2005-03-22	Lapsed	United States of America	Method and apparatus for measuring sheet resistance
88119226	NI-132577	1999-11-30	2001-05-28	Granted	Taiwan	Simplified High Q Inductor Substrate
09477833	6517416	2000-01-05	2003-02-11	Granted	United States of America	A Chemical Mechancial Polisher Including A Pad Conditioner And A Method Of Manufacturing An Integrated Circuit Using The Chemical Mechanical Polisher
90121536	I260734	2001-08-29	2006-08-21	Lapsed	Taiwan	Architecture For Circuit Connection Of A Vertical Transistor
91101551	NI-178411	2002-01-30	2003-09-18	Granted	Taiwan	A Barrier Layer For Interconnect Structures Of A Semiconductor Wafer And Method For Depositing The Barrier Layer
89112268	NI-131524	2000-06-22	2001-05-01	Lapsed	Taiwan	Bonded Article Having Improved Crystalline Structure And Work Function Uniformity And Method For Making The Same
90114096	I256683	2001-06-12	2006-06-11	Lapsed	Taiwan	Process For Manufacturing An Integrated Circuit Including A Dual-Damascene Structure And A Capacitor
91121020	NI-189019	2002-09-13	2004-02-16	Lapsed	Taiwan	A Multi-Layer Inductor Formed In A Semicondutor Substrate
89111610	NI-160919	2000-06-14	2002-08-11	Lapsed	Taiwan	A Process For Manufacturing An Integrated Circuit Including A Dual-Damascene Structure And An Integrated Circuit
89111675	NI-162650	2000-06-15	2002-09-11	Lapsed	Taiwan	A Process For Manufacturing An Integrated Circuit Including A Dual-Damascene Structure And An Integrated Circuit
88119654	NI-147721	1999-11-10	2002-01-01	Granted	Taiwan	Chemical-Mechanical Polishing Apparatus And Method
09505762	6383858	2000-02-16	2002-05-07	Granted	United States of America	Interdigitated Capacitor Structure For Use In An Integrated Circuit
093119217	I412119	2004-06-29	2013-10-11	Lapsed	Taiwan	A Spiral Inductor Formed In A Semiconductor Substrate And A Method For Forming The Inductor
87111331	NI-111955	1998-07-13	2000-02-21	Lapsed	Taiwan	Process For Device Fabrication
88110493	NI-124018	1999-06-22	2001-04-20	Granted	Taiwan	Thin Film Transistors
87121335	NI-131816	1998-12-21	2001-09-03	Lapsed	Taiwan	Insitu Dry Cleaning Process For Poly Gate Etch
87114709	NI-118398	1998-09-29	2000-08-01	Lapsed	Taiwan	Method Of Mechanical Polishing
87105344	NI-106777	1998-04-09	1999-09-11	Lapsed	Taiwan	Method And Apparatus For Imaging Semiconductor Devices
09631755	6657281	2000-08-03	2003-12-02	Lapsed	United States of America	Bipolar Tranistor Having A Low K Material In The Emitter Region
86100615	NI-104341	1997-01-21	1999-11-02	Expired	Taiwan	Articles Comprising Magnetically Soft Thin Films And Methods For Making Such Articles
09528753	6518622	2000-03-20	2003-02-11	Granted	United States of America	Vertical Replacement Gate (VRG) MOSFET With A Conductive Layer Adjacent A Source/Drain Region And Method Of Manufacture Therefor
90100857	NI-151372	2001-01-15	2002-06-21	Lapsed	Taiwan	A Capacitor For Integration With Copper Damascene Processes
89103722	NI-146566	2000-05-24	2002-04-08	Granted	Taiwan	Fabricating High-Q RF Component

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09413741	6436830	1999-10-06	2002-08-20	Granted	United States of America	CMP System For Polishing Semiconductor Wafers And Related Method
90118908	NI-169919	2001-08-02	2002-11-21	Granted	Taiwan	Bipolar Tranistor Having A Low K Material In The Emitter Region
09384631	6586310	1999-08-27	2003-07-01	Granted	United States of America	High Resistivity Film For 4T SRAM
1020000035106	734757	2000-06-24	2007-06-27	Granted	Korea, Republic of (KR)	High Quality Oxide For Use In Integrated Circuits
20010002872	676643	2001-01-18	2007-01-25	Lapsed	Korea, Republic of (KR)	Method For Making A Semiconductor Device
1020000019775	614781	2000-04-15	2006-08-16	Granted	Korea, Republic of (KR)	A Lithographic Process Having Sub-Wavelength Resolution
1019990008029	549974	1999-03-11	2006-02-01	Lapsed	Korea, Republic of (KR)	Process For Fabricating Bipolar And BICMOS Devices
1020000063481	756200	2000-10-27	2007-08-31	Lapsed	Korea, Republic of (KR)	Method For Forming Vias in a Low Dielectric Constant Material
1019990034561	667603	1999-08-20	2007-01-05	Lapsed	Korea, Republic of (KR)	Thin Film Transistors
987041	292707	1998-03-04	2001-03-26	Lapsed	Korea, Republic of (KR)	Thin Film Tantalum Oxide Capacitors And Resulting Product
9850861	347648	1998-11-26	2002-07-24	Lapsed	Korea, Republic of (KR)	Method For Removing Etching Residues And Contaminants
9849182	380514	1998-11-17	2003-04-03	Lapsed	Korea, Republic of (KR)	Integrated Circuit Conductors That Avoid Current Crowding
19970024048	279034	1997-06-07	2000-10-26	Expired	Korea, Republic of (KR)	Dose Modification Proximity Effect Compensation (PEC) Technique For Electron Beam Lithography
9817633	271843	1998-05-15	2000-08-21	Lapsed	Korea, Republic of (KR)	Method And Apparatus For Imaging Semiconductor Devices
1019980015165	329580	1998-04-28	2002-03-09	Lapsed	Korea, Republic of (KR)	Deuterated Bipolar Transistors And Method Of Manufacture Thereof
10397451	6746925	2003-03-25	2004-06-08	Granted	United States of America	High-k dielectric bird's beak optimizations using in-situ O2 plasma oxidation
10423184	7262119	2003-04-25	2007-08-28	Granted	United States of America	Method for incorporating germanium into a semiconductor wafer
1020010052995	847233	2001-08-30	2008-07-14	Lapsed	Korea, Republic of (KR)	Method of Manufacturing An Integrated Circuit
1020010025174	445020	2001-05-09	2004-08-10	Lapsed	Korea, Republic of (KR)	Calibration Method For Quantitative Elemental Analysis
1020000001148	695026	2000-01-11	2007-03-08	Lapsed	Korea, Republic of (KR)	Integrated Circuit Device Having Dual Damascene Capacitor
1020000000859	10-0658954	2000-01-10	2006-12-12	Granted	Korea, Republic of (KR)	Damascene Capacitors For Integrated Circuits
1019990031535	570910	1999-07-31	2006-04-07	Lapsed	Korea, Republic of (KR)	Silicon Germanium Heterostructure Bipolar Transistor With Indium Doped Base
19990011551	0313423	1999-04-02	2001-10-19	Lapsed	Korea, Republic of (KR)	Membrane Mask for Projection Lithography
1019990008028	319571	1999-03-11	2001-12-20	Granted	Korea, Republic of (KR)	Electronic Components With Doped Metal Oxide Dielectric Materials And A Process For Making Electronic Components With Doped Metal Oxide Dielectric Materials
1019990001574	371623	1999-01-20	2003-01-27	Granted	Korea, Republic of (KR)	Electronic Apparatus
20010003082	429726	2001-01-19	2004-04-20	Lapsed	Korea, Republic of (KR)	A Capacitor For Integration With Copper Damascene Processes
20000010425	605779	2000-03-02	2006-07-20	Granted	Korea, Republic of (KR)	Fabricating High-Q RF Component
1020000035368	767610	2000-06-26	2007-10-10	Granted	Korea, Republic of (KR)	A Gate Stack Structure For Integrated Circuit Fabrication
1020070065264	10-1359555	2007-06-29	2014-01-29	Lapsed	Korea, Republic of (KR)	Method To Improve Metal Defects In Semiconductor Device Fabrication

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
1020040065903	10-1084959	2004-08-20	2011-11-14	Granted	Korea, Republic of (KR)	A Spiral Inductor Formed In A Semiconductor Substrate And A Method For Forming The Inductor
10435442	7001695	2003-05-09	2006-02-21	Lapsed	United States of America	Multiple alternating phase shift technology for amplifying resolution
2001138037	5544677	2001-05-09	2014-07-09	Granted	Japan	Calibration Method For Quantitative Elemental Analysis
2000135070	3492977	2000-05-08	2003-11-14	Granted	Japan	Electron Emitters for Lithography Tools
2000048754	3524461	2000-02-25	2004-02-20	Lapsed	Japan	Process For The Fabrication Of Dual Gate Structures For CMOS Devices
2000381501	4138232	2000-12-15	2008-06-13	Granted	Japan	Dual Damascene Bond Pad Structure for Lowering Stress and Allowing Circuitry Under Pads
1020040023990	10-1084957	2004-04-08	2011-11-14	Granted	Korea, Republic of (KR)	Aluminum Pad Power Bus And Signal Routing For Integrated Circuit Devices Utilizing Copper Technology Interconnect Structures
10268775	3649917	1998-09-22	2005-02-25	Lapsed	Japan	Dielectric Materials Of Amorphous Compositions And Devices Employing Same
90121470	NI-170349	2001-08-30	2002-12-21	Granted	Taiwan	Stacked Structure For Parallel Capacitors And Method Of Fabrication
91119882	NI-188794	2002-08-30	2004-02-12	Lapsed	Taiwan	Vertical Replacement-Gate Junction Field-Effect Transistor
20040082410	10-1044528	2004-10-15	2011-06-20	Lapsed	Korea, Republic of (KR)	Metal-Oxide Semiconductor Device Having Improved Performance And Reliability.
20050075648	10-1184123	2005-08-18	2012-09-12	Lapsed	Korea, Republic of (KR)	Metal-Oxide-Semiconductor Device Having An Enhanced Shielding Structure
1020020060412	10-939648	2002-10-04	2010-01-25	Lapsed	Korea, Republic of (KR)	A Multi-Layer Inductor Formed In A Semicondutor Substrate
1020040077975	10-1045194	2004-09-30	2011-06-23	Lapsed	Korea, Republic of (KR)	Real-Time Gate Etch Critical Dimension Control By Oxygen Monitoring
10041685	3187764	1998-02-24	2001-05-11	Lapsed	Japan	GaAs-Based MOSFET, And Method Of Making Same
88122552	NI-144804	2000-02-11	2001-11-21	Granted	Taiwan	Barrier For Copper Metallization
89100359	NI-144338	2000-01-11	2002-03-06	Lapsed	Taiwan	Integrated Circuit Device Having Dual Damascene Capacitor
10349957	3242079	1998-12-09	2001-10-19	Lapsed	Japan	Lithographic Process For Device Fabrication Using A Multilayer Mask Which Has Been Previously Inspected
10453821	6911093	2003-06-02	2005-06-28	Lapsed	United States of America	Lid liner for chemical vapor deposition chamber
08314671	3226808	1996-11-26	2001-08-31	Expired	Japan	Method of Depositing Thin Passivating Film on Microminiature Semiconductor Devices
09085442	3600399	1997-04-04	2004-09-24	Expired	Japan	Process For Device Fabrication In Which A Thin Layer Of Cobalt Silicide Is Formed
09256542	3315064	1997-09-22	2002-06-07	Lapsed	Japan	Method Of Reducing Dielectric Damage From Plasma Etch Charging
2001260998	4058710	2001-08-30	2007-12-28	Lapsed	Japan	Method of Manufacturing An Integrated Circuit
2000190017	3737341	2000-06-23	2005-11-04	Granted	Japan	High Quality Oxide For Use In Integrated Circuits
90110939	NI-203745	2001-05-08	2004-06-21	Lapsed	Taiwan	Calibration Method For Quantitative Elemental Analysis

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
10295074	3387832	1998-10-16	2003-01-10	Lapsed	Japan	Thin Film Transistor And Organic Semiconductor Material Therefor
10197846	3529634	1998-07-13	2004-03-05	Lapsed	Japan	Process For Device Fabrication
10114190	3405520	1998-04-09	2003-03-07	Lapsed	Japan	Circuit And Method For Providing Interconnections Among Individual Integrated Circuit Chips In A Multi-Chip Module
10306067	6854104	2002-11-27	2005-02-08	Lapsed	United States of America	First approximation for OPC significant speed-up
1020000023964	634727	2000-05-04	2006-10-10	Lapsed	Korea, Republic of (KR)	Electron Emitters for Lithography Tools
1020010034116	727794	2001-06-16	2007-06-07	Lapsed	Korea, Republic of (KR)	Process For Manufacturing An Integrated Circuit Including A Dual-Damascene Structure And A Capacitor
1020010053055	748864	2001-08-25	2007-08-07	Lapsed	Korea, Republic of (KR)	Architecture For Circuit Connection Of A Vertical Transistor
1020010053374	0822331	2001-08-31	2008-04-08	Lapsed	Korea, Republic of (KR)	Methods of Fabricating A Metal-Oxide-Metal Capacitor And Associated Apparatus
20010014032	0437586	2001-03-19	2004-06-16	Lapsed	Korea, Republic of (KR)	Vertical Replacement Gate (VRG) MOSFET With A Conductive Layer Adjacent A Source/Drain Region And Method Of Manufacture Therefor
19990009959	357842	1999-03-24	2002-10-09	Lapsed	Korea, Republic of (KR)	Mold For Non-Photolithographic Fabrication Of Microstructures
08938099	6254456	1997-09-26	2001-07-03	Expired	United States of America	Modifying contact areas of a polishing pad to promote uniform removal rates
1019990008027	333996	1999-03-11	2002-04-11	Lapsed	Korea, Republic of (KR)	Article Comprising Fluorinated Diamond-Like Carbon And Method For Fabricating Article
1020000009286	821494	2000-02-25	2008-04-04	Lapsed	Korea, Republic of (KR)	Process For The Fabrication Of Dual Gate Structures For CMOS Devices
1019990060855	329096	1999-12-23	2002-03-06	Lapsed	Korea, Republic of (KR)	Chemical-Mechanical Polishing Apparatus And Method
1020000035302	684480	2000-06-26	2007-02-13	Lapsed	Korea, Republic of (KR)	Charge Injection Transistor Using High-K Dielectrics Barrier Layer
10403611	7016054	2003-03-31	2006-03-21	Lapsed	United States of America	Lithography line width monitor reflecting chip-wide average feature size
9850222	0296859	1998-11-23	2001-05-15	Lapsed	Korea, Republic of (KR)	Polycide Gate Structure With Intermediate Barrier
10434028	6929532	2003-05-08	2005-08-16	Lapsed	United States of America	Method and apparatus for filtering a chemical polishing slurry of a wafer fabrication process
10409859	6889818	2003-04-09	2005-05-10	Lapsed	United States of America	Wafer blade contact monitor
20000050243	456704	2000-08-29	2004-11-02	Granted	Korea, Republic of (KR)	Simplified High Q Inductor Substrate
20000058700	418231	2000-10-06	2004-01-29	Lapsed	Korea, Republic of (KR)	Electron Beam Imaging Apparatus
1020040078027	10-1214818	2004-09-30	2012-12-17	Granted	Korea, Republic of (KR)	Selective Isotropic Etch For Titanium Based Materials
1020020054579	10-931816	2002-09-10	2009-12-07	Granted	Korea, Republic of (KR)	Vertical Replacement-Gate Junction Field-Effect Transistor
2000328233	4187399	2000-10-27	2008-09-19	Lapsed	Japan	Method For Forming Vias in a Low Dielectric Constant Material
2000104530	3676183	2000-04-06	2005-05-13	Lapsed	Japan	Method For Processing Silicon Workpieces Using Hybrid Optical Thermometer System
2002371914		2002-12-24		Lapsed	Japan	CMOS Vertical Replacement Gate (VRG) Transistors

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
2001217199	4931296	2001-07-17	2012-02-24	Lapsed	Japan	Electrostatic Discharge Protection Device With Monolithically Formed Resistor-Capacitor Portion
2000189020	4108252	2000-06-23	2008-04-11	Lapsed	Japan	Charge Injection Transistor Using High-K Dielectrics Barrier Layer
11240663	3506965	1999-08-27	2003-12-26	Granted	Japan	Process For Fabricating Vertical Transistors
10333150	3306804	1998-11-24	2002-05-17	Lapsed	Japan	Polycide Gate Structure With Intermediate Barrier
11100764	3408990	1999-04-08	2003-03-14	Lapsed	Japan	Membrane Mask for Projection Lithography
2001032114	4917711	2001-02-08	2012-02-03	Lapsed	Japan	Method For Producing Devices Having Piezoelectric Films
2002291750	4903971	2002-10-04	2012-01-13	Granted	Japan	A Multi-Layer Inductor Formed In A Semicondutor Substrate
10132894	3217750	1998-05-15	2001-08-03	Lapsed	Japan	Method And Apparatus For Imaging Semiconductor Devices
10334430	6980917	2002-12-30	2005-12-27	Lapsed	United States of America	Optimization of die yield in a silicon wafer sweet spot
10327452	7171047	2002-12-20	2007-01-30	Granted	United States of America	Adaptive Sem edge recognition algorithm
2004278665	5073159	2004-09-27	2012-08-31	Lapsed	Japan	Real-Time Gate Etch Critical Dimension Control By Oxygen Monitoring
2005237420	5111744	2005-08-18	2012-10-19	Lapsed	Japan	Metal-Oxide-Semiconductor Device Having An Enhanced Shielding Structure
2000309801	3895535	2000-10-10	2006-12-22	Granted	Japan	Lens Array For Electron Beam Lithography Tool
2004114863		2004-04-09		Lapsed	Japan	Aluminum Pad Power Bus And Signal Routing For Integrated Circuit Devices Utilizing Copper Technology Interconnect Structures
2001108267	5036101	2001-04-06	2012-07-13	Lapsed	Japan	Device Comprising Bipolar Semi-Conducting Film
2001218921	4352365	2001-07-19	2009-08-07	Granted	Japan	Integrated Circuit Package Having Partially Exposed Conductive Layer
10251016	6544829	2002-09-20	2003-04-08	Granted	United States of America	Polysilicon gate salicidation
2001119052	5321933	2001-04-18	2013-07-26	Lapsed	Japan	Self Alignbed Gated Schottky Diode Guard Ring Structures
2005100702664	ZL 200510070266.4	2005-05-13	2009-05-06	Lapsed	China	Metal-Oxide-Semiconductor Device Having An Enhanced Shielding Structure
2007101270281	ZL200710127028.1	2007-06-28	2011-06-01	Lapsed	China	Method To Improve Metal Defects In Semiconductor Device Fabrication
2004100558476	ZL200410055847.6	2004-08-04	2010-08-18	Lapsed	China	A Spiral Inductor Formed In A Semiconductor Substrate And A Method For Forming The Inductor
10283630	6849512	2002-10-30	2005-02-01	Lapsed	United States of America	Thin gate dielectric for a CMOS transistor and method of fabrication thereof
09670998	6482075	2000-09-27	2002-11-19	Granted	United States of America	Process for planarizing an isolation structure in a substrate
2004100432567	ZL 200410043256.7	2004-05-14	2009-10-14	Granted	China	Method And Apparatus For Manufacturing Multiple Circuit Patterns Using A Multiple Project Mask
10277025	6869893	2002-10-21	2005-03-22	Granted	United States of America	Laminate low K film
2007171578	5393005	2007-06-29	2013-10-25	Lapsed	Japan	Method To Improve Metal Defects In Semiconductor Device Fabrication
2000189026		2000-06-23		Abandoned	Japan	A Gate Stack Structure For Integrated Circuit Fabrication

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
2004278932	4855665	2004-09-27	2011-11-04	Granted	Japan	Selective Isotropic Etch For Titanium Based Materials
2004300894	5334351	2004-10-15	2013-08-09	Lapsed	Japan	Metal-Oxide Semiconductor Device Having Improved Performance And Reliability.
2000362265	4820978	2000-11-29	2011-09-16	Lapsed	Japan	Semiconductor Device Having Self-Aligned Contact And Landing PAD Structure And Method Of Forming Same
200133034	5093943	2001-02-09	2012-09-28	Lapsed	Japan	Method For Producing Piezoelectric Films With Rotating Magnetron Sputtering System
2001061239	4397537	2001-03-06	2009-10-30	Lapsed	Japan	Vertical Replacement Gate (VRG) MOSFET With A Conductive Layer Adjacent A Source/Drain Region And Method Of Manufacture Therefor
2000362320	5099942	2000-11-29	2012-10-05	Granted	Japan	Thin Film Transistors
10324698	6743701	2002-12-20	2004-06-01	Granted	United States of America	Method for the formation of active area utilizing reverse trench isolation
09274254	6524974	1999-03-22	2003-02-25	Granted	United States of America	FORMATION OF IMPROVED LOW DIELECTRIC CONSTANT CARBON-CONTAINING SILICON OXIDE DIELECTRIC MATERIAL BY REACTION OF CARBON-CONTAINING SILANE WITH OXIDIZING AGENT IN THE PRESENCE OF ONE OR MORE REACTION RETARDANTS
1020050389988	102005038998.8	2005-08-16	2010-02-18	Lapsed	Germany (Federal Republic of)	Metal-Oxide-Semiconductor Device Having An Enhanced Shielding Structure
10328346	6864020	2002-12-24	2005-03-08	Lapsed	United States of America	Chromeless phase shift mask using non-linear optical materials
10293631	6870160	2002-11-13	2005-03-22	Granted	United States of America	Method and apparatus for monitoring the condition of a lubricating medium
10295489	6818365	2002-11-15	2004-11-16	Lapsed	United States of America	Feed forward leveling
10283688	6650958	2002-10-30	2003-11-18	Granted	United States of America	Integrated process tool monitoring system for semiconductor fabrication
09052793		1998-03-31		Abandoned	United States of America	Method of Electrically Connecting and Isolating Components With Vertical Elements Extending Between Interconnect Layers in an Integrated Circuit.
10341082	7023067	2003-01-13	2006-04-04	Lapsed	United States of America	Bond pad design
10201010	6645857	2002-07-22	2003-11-11	Granted	United States of America	Key hole filling
10335177	6812158	2002-12-31	2004-11-02	Granted	United States of America	Modular growth of multiple gate oxides
09695534	6376795	2000-10-24	2002-04-23	Granted	United States of America	Direct current dechucking system
09878741	6498045	2001-06-11	2002-12-24	Granted	United States of America	Optical intensity modifier
10163120	6608365	2002-06-04	2003-08-19	Granted	United States of America	Low leakage PMOS on-chip decoupling capacitor cells compatible with standard CMOS cells
10164227	6743669	2002-06-05	2004-06-01	Granted	United States of America	Method of reducing leakage using Si3N4 or SiON block dielectric films
10254708	6872321	2002-09-25	2005-03-29	Granted	United States of America	Direct positive image photo-resist transfer of substrate design

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10190954	6806038	2002-07-08	2004-10-19	Lapsed	United States of America	Plasma passivation
003025376	60046543.8	2000-03-28	2011-10-12	Lapsed	Germany (Federal Republic of)	Method For Processing Silicon Workpieces Using Hybrid Optical Thermometer System
993015437	69900028.9	1999-03-02	2000-11-15	Lapsed	Germany (Federal Republic of)	Process For Fabricating Bipolar And BICMOS Devices
983072323	69825384.1	1998-09-08	2004-08-04	Lapsed	Germany (Federal Republic of)	Dielectric Materials Of Amorphous Compositions And Devices Employing Same
983035007	69830946.4	1998-05-05	2005-07-27	Granted	Germany (Federal Republic of)	Method And Apparatus For Imaging Semiconductor Devices
10138609	6566244	2002-05-03	2003-05-20	Granted	United States of America	Process for improving mechanical strength of layers of low k dielectric material
003086857	60047649.9	2000-10-03	2012-11-21	Lapsed	Germany (Federal Republic of)	Lens Array For Electron Beam Lithography Tool
013001250	60142863.3	2001-01-08	2010-08-25	Granted	Germany (Federal Republic of)	A Capacitor For Integration With Copper Damascene Processes
003037801	60039551.0	2000-05-05	2008-07-23	Granted	Germany (Federal Republic of)	Electron Emitters for Lithography Tools
993015569	69900076.9	1999-03-02	2001-04-11	Lapsed	Germany (Federal Republic of)	Article Comprising Fluorinated Diamond-Like Carbon And Method For Fabricating Article
013070107	60121685.7	2001-08-17	2006-07-26	Lapsed	Germany (Federal Republic of)	Method of Manufacturing An Integrated Circuit
003090859	60038423.3	2000-10-16	2008-03-26	Lapsed	Germany (Federal Republic of)	Method For Forming Vias in a Low Dielectric Constant Material
993084235	69936175.3	1999-10-25	2007-05-30	Granted	Germany (Federal Republic of)	An Inductor Or Low Loss Interconnect And A Method Of Manufacturing An Inductor Or Low Loss Interconnect In An Integrated Circuit
973020498	69724317.6	1997-03-25	2003-08-27	Expired	Germany (Federal Republic of)	Process For Device Fabrication In Which A Thin Layer Of Cobalt Silicide Is Formed
003000528	60047099.7	2000-01-06	2012-04-18	Granted	Germany (Federal Republic of)	Integrated Circuit Device Having Dual Damascene Capacitor
003015302	60018121.9	2000-02-28	2005-02-16	Lapsed	Germany (Federal Republic of)	Fabricating High-Q RF Component
993087006	69937868.0	1999-11-02	2008-01-02	Granted	Germany (Federal Republic of)	Simplified High Q Inductor Substrate
10077497	6638776	2002-02-15	2003-10-28	Granted	United States of America	Thermal characterization compensation
09596909	6499001	2000-06-20	2002-12-24	Granted	United States of America	Engineering database feedback system
013007406	60143682.2	2001-01-29	2010-12-22	Granted	Germany (Federal Republic of)	Method For Producing Devices Having Piezoelectric Films

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10224025	6764389	2002-08-20	2004-07-20	Granted	United States of America	Conditioning bar assembly having an abrasion member supported on a polycarbonate member
09981200	6750668	2001-10-17	2004-06-15	Granted	United States of America	Vortex unit for providing a desired environment for a semiconductor process
09605380	6492731	2000-06-27	2002-12-10	Granted	United States of America	Composite low dielectric constant film for integrated circuit structure
09639449	6412358	2000-08-15	2002-07-02	Granted	United States of America	Cleanliness verification system
09971329	6472316	2001-10-04	2002-10-29	Granted	United States of America	Photolithography overlay control
09654689		2000-09-05		Abandoned	United States of America	Integrated Circuit Isolation System
09704164	6423630	2000-10-31	2002-07-23	Granted	United States of America	Process for forming low K dielectric material between metal lines
10007405	6537896	2001-12-04	2003-03-25	Granted	United States of America	Process for treating porous low k dielectric material in damascene structure to form a non-porous dielectric diffusion barrier on etched via and trench surfaces in the porous low k dielectric material
09957555	6641635	2001-09-19	2003-11-04	Granted	United States of America	Liquid based air filtration system
11438493	7605064	2006-05-22	2009-10-20	Lapsed	United States of America	Selective Laser Annealing Of Semiconductor Material
10105483	6574525	2002-03-25	2003-06-03	Granted	United States of America	In situ measurement
08277852	5691110	1994-07-20	1997-11-25	Expired	United States of America	Process For Controlled Deprotection Of Polymers And A Process For Fabricating A Device Utilizing Partially Deprotected Resist Polymers
08552998	5656412	1995-11-03	1997-08-12	Expired	United States of America	Energy-Sensitive Resist Material And A Process For Device Fabrication Using An Energy-Sensitive Resist Material
11339540	7342316	2006-01-26	2008-03-11	Granted	United States of America	Cross-Fill Pattern For Metal Fill Levels, Power-Supply Filtering, And Analog Circuit Shielding
2006353600	4797199	2006-12-28	2011-08-12	Lapsed	Japan	Article Comprising A Variable Inductor
2007187885	5676836	2001-08-03	2015-01-09	Granted	Japan	Bipolar Tranistor Having A Low K Material In The Emitter Region
10609889	6869873	2003-06-30	2005-03-22	Granted	United States of America	Copper Silicide Passivation For Improved Reliability
08644596	5596208	1996-05-10	1997-01-21	Expired	United States of America	Article Comprising An Organic Thin Film Transistor
2007063290	5011459	2001-06-27	2012-06-15	Lapsed	Japan	A Method of Testing an Integrated Circuit
2007130041	5392995	2000-06-21	2013-10-25	Lapsed	Japan	Bonded Article Having Improved Crystalline Structure And Work Function Uniformity And Method For Making The Same
2007210590		2004-08-20		Abandoned	Japan	A Spiral Inductor Formed In A Semiconductor Substrate And A Method For Forming The Inductor
20070073750	10-0890080	2001-02-09	2009-03-16	Lapsed	Korea, Republic of (KR)	Method For Producing Piezoelectric Films With Rotating Magnetron Sputtering System
08828155	5956618	1997-03-27	1999-09-21	Expired	United States of America	Process For Producing Multi\(miLevel Metallization In An Integrated Circuit

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08656996	5767557	1996-05-24	1998-06-16	Expired	United States of America	PMOSFETs Having Indium Or Gallium Doped Buried Channels And N\(pl PolysiliconGates And CMOS Devices Fabricated Therefrom
2007104568		2007-04-12		Abandoned	Japan	A Capacitor For Integration With Copper Damascene Processes
10721126	7067419	2003-11-25	2006-06-27	Granted	United States of America	Mask Layer And Dual Damascene Interconnect Structure In A Semiconductor Device
09000930	6228750	1997-12-30	2001-05-08	Expired	United States of America	Method of Doping a Semiconductor Surface
10694611	7301107	2003-10-27	2007-11-27	Granted	United States of America	Semiconductor Device Having Reduced Intra-Level And Inter-Level Capacitance
09391729	6150668	1999-09-08	2000-11-21	Granted	United States of America	Thin-Film Transistor Monolithically Integrated With An Organic Light-Emitting Diode
09241458	6211541	1999-02-02	2001-04-03	Granted	United States of America	An Article For De-Embedding Parasitics In Integrated Circuits
09041434	5923056	1998-03-12	1999-07-13	Expired	United States of America	Electronic Components With Doped Metal Oxide Dielectric Materials And A Process For Making Electronic Components With Doped Metal Oxide Dielectric Materials
08864220	5908312	1997-05-28	1999-06-01	Expired	United States of America	Semiconductor Device Fabrication
08441142	6278127	1995-05-15	2001-08-21	Granted	United States of America	Article Comprising An Organic Thin Film Transistor Adapted For Biasing To Form A N-Type Or A P-Type Transistor
08500729	5633103	1995-07-11	1997-05-27	Expired	United States of America	Self-Aligned Alignment Marks For Phase-Shifting Masks
09607511	6368979	2000-06-28	2002-04-09	Granted	United States of America	Process for forming trenches and vias in layers of low dielectric constant carbon-doped silicon oxide dielectric material of an integrated circuit structure
09574365	6512985	2000-05-19	2003-01-28	Granted	United States of America	Process control system
10012821	7314527	2001-12-10	2008-01-01	Granted	United States of America	Reactor system
09407357	6223770	1999-09-29	2001-05-01	Granted	United States of America	Vacuum valve interface
09932527	6723653	2001-08-17	2004-04-20	Granted	United States of America	Process for reducing defects in copper-filled vias and/or trenches formed in porous low-k dielectric material
09431439	6284586	1999-11-01	2001-09-04	Expired	United States of America	Integrated circuit device and method of making the same using chemical mechanical polishing to remove material in two layers following masking
09641661	6598194	2000-08-18	2003-07-22	Granted	United States of America	Test limits based on position
09428344	6316354	1999-10-26	2001-11-13	Granted	United States of America	Process for removing resist mask of integrated circuit structure which mitigates damage to underlying low dielectric constant silicon oxide dielectric layer
08673655	6115233	1996-06-28	2000-09-05	Expired	United States of America	Integrated circuit device having a capacitor with the dielectric peripheral region being greater than the dielectric central region
09953667	6718524	2001-09-17	2004-04-06	Granted	United States of America	Method and apparatus for estimating state-dependent gate leakage in an integrated circuit

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09607512	6350700	2000-06-28	2002-02-26	Granted	United States of America	Process for forming trenches and vias in layers of low dielectric constant carbon-doped silicon oxide dielectric material of an integrated circuit structure
09587609	6375550	2000-06-05	2002-04-23	Granted	United States of America	Method and apparatus for enhancing uniformity during polishing of a semiconductor wafer
09413667	6355532	1999-10-06	2002-03-12	Granted	United States of America	Subtractive oxidation method of fabricating a short-length and vertically-oriented channel, dual-gate, CMOS FET
09346493	6232658	1999-06-30	2001-05-15	Granted	United States of America	Process to prevent stress cracking of dielectric films on semiconductor wafers
09573123	6341056	2000-05-17	2002-01-22	Granted	United States of America	Capacitor with multiple-component dielectric and method of fabricating same
09946253	6648743	2001-09-05	2003-11-18	Granted	United States of America	Chemical mechanical polishing pad
09272732	6316817	1998-12-14	2001-11-13	Expired	United States of America	MeV implantation to form vertically modulated N+ buried layer in an NPN bipolar transistor
09109335	6077783	1998-06-30	2000-06-20	Granted	United States of America	Method and apparatus for detecting a polishing endpoint based upon heat conducted through a semiconductor wafer
09209704	6121147	1998-12-11	2000-09-19	Granted	United States of America	Apparatus and method of detecting a polishing endpoint layer of a semiconductor wafer which includes a metallic reporting substance
09344056	6348808	1999-06-25	2002-02-19	Granted	United States of America	Mobile ionic contamination detection in manufacture of semiconductor devices
09559934	6342734	2000-04-27	2002-01-29	Granted	United States of America	Interconnect-integrated metal-insulator-metal capacitor and method of fabricating same
10006398	6809824	2001-11-30	2004-10-26	Lapsed	United States of America	Alignment process for integrated circuit structures on semiconductor substrate using scatterometry measurements of latent images in spaced apart test fields on substrate
09302830	6136719	1999-04-30	2000-10-24	Granted	United States of America	Method and arrangement for fabricating a semiconductor device
09052793		1900-01-01		Abandoned	United States of America	Method of Electrically Connecting and Isolating Components with Vertical Elements Extending Between Interconnect Layers in an Integrated Circuit
08822078	5861055	1997-03-20	1999-01-19	Expired	United States of America	Polishing composition for CMP operations
09204813	6120607	1998-12-03	2000-09-19	Granted	United States of America	Apparatus and method for blocking the deposition of oxide on a wafer
08344898	3121274	1996-12-25	2000-10-20	Expired	Japan	Polishing Composition for CMP Operations
09074298	6071562	1998-05-07	2000-06-06	Granted	United States of America	Process for depositing titanium nitride films
08801668	5858828	1997-02-18	1999-01-12	Expired	United States of America	Use of MEV implantation to form vertically modulated N+ buried layer in an NPN bipolar transistor
10044215	6649537	2001-11-19	2003-11-18	Granted	United States of America	Intermittent pulsed oxidation process
08236706	5750312	1994-05-02	1998-05-12	Expired	United States of America	Process for Fabricating a Device

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08479018	5661091	1995-06-06	1997-08-26	Expired	United States of America	Method of manufacturing a semiconductor device having PN junctions separated by depressions
12339407	8423942	2008-12-19	2013-04-16	Granted	United States of America	Fill Patterning For Symmetrical Circuits
11273857	7332924	2005-11-15	2008-02-19	Granted	United States of America	Embedded Test Circuitry And A Method For Testing A Semiconductor Device For Breakdown, Wearout Or Failure
11237410	7291849	2005-09-28	2007-11-06	Granted	United States of America	Calibration Standard For Transmission Electron Microscopy
11853417	7820517	2007-09-11	2010-10-26	Lapsed	United States of America	Control Of Hot Carrier Injection In A Metal-Oxide Semiconductor Device
10977732	7279744	2004-10-29	2007-10-09	Granted	United States of America	Control Of Hot Carrier Injection In A Metal-Oxide Semiconductor Device
10953897	7116174	2004-09-29	2006-10-03	Lapsed	United States of America	Base Current Compensation Circuit For A Bipolar Junction Transistor
10947069	7074628	2004-09-22	2006-07-11	Lapsed	United States of America	Test Structure And Method For Yield Improvement Of Double Poly Bipolar Device
10623983	7138690	2003-07-21	2006-11-21	Granted	United States of America	Shielding Structure For Use In A Metal\(miOxide\(miSemiconductor Device
10643123	6893883	2003-08-18	2005-05-17	Granted	United States of America	Method and Apparatus Using An On-Chip Ring Oscillator For Chip Identification
10929843	7199685	2004-08-30	2007-04-03	Granted	United States of America	Three-Terminal Tuneable Active Inductor
10633334	7033931	2003-08-01	2006-04-25	Granted	United States of America	Temperature Optimization Of A Physical Vapor Deposition Process To Prevent Extrusion Into Openings
10007417	6683465	2001-10-31	2004-01-27	Granted	United States of America	Integrated Circuit Having Stress Migration Test Structure And Method Therefor
10007904	6747445	2001-10-31	2004-06-08	Granted	United States of America	Stress Migration Test Structure And Method Therefor
09993414	6472279	2001-11-05	2002-10-29	Granted	United States of America	Method Of Manufacturing A Channel Stop Implant In A Semiconductor Device
09785636	6462305	2001-02-16	2002-10-08	Granted	United States of America	Method Of Manufacturing A Polishing Pad Using A Beam
09777470		2001-02-06		Abandoned	United States of America	An Alternate Pad Conditioning Method
09778986	6702654	2001-02-07	2004-03-09	Granted	United States of America	Conditioning Wheel For Conditioning A Semiconductor Wafer Polishing Pad And Method Of Manufacture Thereof
09637496	6853048	2000-08-11	2005-02-08	Lapsed	United States of America	Bipolar Transistor Having An Isolation Structure Located Under The Base, Emitter And Collector And A Method Of Manufacture Thereof
09585159	6329226	2000-06-01	2001-12-11	Granted	United States of America	A Method For Fabricating A Thin-Film Transistor
09583936	6445206	2000-05-31	2002-09-03	Granted	United States of America	Method And Apparatus For Determining Yield Impacting Tests At Wafer Level And Package Level For Semiconductor Devices
09742314	6794694	2000-12-21	2004-09-21	Granted	United States of America	Inter-Wiring-Layer Capacitors
09557430	6506690	2000-04-25	2003-01-14	Granted	United States of America	Dielectric Deposition Method and Semiconductor Device

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09496829	6364744	2000-02-02	2002-04-02	Granted	United States of America	CMP System And Slurry For Polishing Semiconductor Wafers And Related Method
09317430	6524872	1999-05-24	2003-02-25	Granted	United States of America	Using Fast Hot-Carrier Aging Method For Measuring Plasma Charging Damage
09472326	6680780	1999-12-23	2004-01-20	Granted	United States of America	Interferometric Probe Stabilization Relative To Subject Movement
09470861	6366803	1999-12-23	2002-04-02	Granted	United States of America	Predictive Probe Stabilization Relative To subject Movement
09231566	6225801	1999-01-14	2001-05-01	Granted	United States of America	Article Comprising Electronic Circuits And Devices With Magnetically Programmable Electrical Resistance
09351971	6294447	1999-07-12	2001-09-25	Granted	United States of America	Method Of Making Devices Having Thin Dielectric Layers
09293510	6121827	1999-04-15	2000-09-19	Granted	United States of America	Digital Noise Reduction In Integrated Circuits And Circuit Assemblies
09223354	6440829	1998-12-30	2002-08-27	Granted	United States of America	N\(miProfile Engineering At The Poly\(slGate Oxide And Gate Oxide\(slSI Interfaces Through ! NH sub 3 !, Annealing Of A Layered Poly\(slá\(miSi Structure
09222110	6093668	1998-12-29	2000-07-25	Granted	United States of America	Low Temperature Coefficient Dielectric Materials And Devices Comprising Same
09162542	6177363	1998-09-29	2001-01-23	Granted	United States of America	A Method for Forming a Nitride Layer Suitable for Use in Advanced Gate Dielectric Materials
09126032	6037621	1998-07-29	2000-03-14	Granted	United States of America	On-Chip Capacitor Structure
09070387	5976331	1998-04-30	1999-11-02	Granted	United States of America	Electrodeposition Apparatus For Coating Wafers
09096998	6323131	1998-06-13	2001-11-27	Granted	United States of America	Passivated Copper Surfaces
09013486	6017805	1998-01-26	2000-01-25	Granted	United States of America	Method Of Reducing Mobile Ion Contaminants In Semiconductor Films
08919192	5894349	1997-08-20	1999-04-13	Expired	United States of America	Manufacturing Method Including Near-Field Optical Microscope Examination OfA Semiconductor Substrate
08756695	5841333	1996-11-26	1998-11-24	Expired	United States of America	Minimal Delay Conductive Lead Lines For Integrated Circuits
08887861	6011404	1997-07-03	2000-01-04	Expired	United States of America	System And Method For Determining Near-Surface Lifetimes And The Tunneling Field Of A Dielectric In A Semiconductor
08695441	5698934	1996-08-12	1997-12-16	Expired	United States of America	Field Emission Device With Randomly Distributed Gate Apertures
08548533	5588894	1995-10-26	1996-12-31	Expired	United States of America	Field Emission Device And Method For Making Same
09026227	6045977	1998-02-19	2000-04-04	Granted	United States of America	Process For Patterning Conductive Polyaniline Films
12953624	8624352	2010-11-24	2014-01-07	Granted	United States of America	Mitigation of Detrimental Breakdown of a High Dielectric Constant Metal-Insulator-Metal Capacitor in a Capacitor Bank
078690823		2007-12-10		Abandoned	European Patent	Chip Identification Using Top Metal Layer
12741839	8242603	2010-07-08	2012-08-14	Granted	United States of America	Chip Identification Using Top Metal Layer
2009549571	5084843	2007-02-14	2012-09-14	Lapsed	Japan	Method To Reduce Collector Resistance Of A Vertical PNP And Integration Into A Standard CMOS Process Flow

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1020097019023	10-1320913	2007-02-14	2013-10-14	Lapsed	Korea, Republic of (KR)	Method To Reduce Collector Resistance Of A Bipolar Transistor and Integration into a CMOS Flow
12523368	7923340	2009-07-16	2011-04-12	Granted	United States of America	Method To Reduce Collector Resistance Of A Bipolar Transistor And Integration Into A Standard CMOS Flow
11535501	7847666	2006-09-27	2010-12-07	Granted	United States of America	Differential Inductor For Use In Integrated Circuits
11237095	7642617	2005-09-28	2010-01-05	Lapsed	United States of America	Integrated Circuit With Depletion Mode JFET
11383670	7563669	2006-05-16	2009-07-21	Lapsed	United States of America	Integrated Circuit With A Trench Capacitor Structure And Method Of Manufacture
11153893	7141486	2005-06-15	2006-11-28	Granted	United States of America	Shallow Trench Isolation Structures Comprising A Graded Doped Sacrificial Silicon Dioxide Material And A Method For Forming Shallow Trench Isolation Structures
097895247		2009-03-18		Abandoned	European Patent	Integrated Circuit Inductors With Directed Magnetic Flux Lines For Magnetic Coupling Reduction
20107028513	101575387	2009-03-18	2015-12-01	Granted	Korea, Republic of (KR)	Integrated Circuit Inductors With Directed Magnetic Flux Lines For Magnetic Coupling Reduction
098122453	I394180	2009-07-02	2013-04-21	Lapsed	Taiwan	Integrated Circuit Inductors With Directed Magnetic Flux Lines For Magnetic Coupling Reduction
2009801222622	ZL200980122262.2	2009-03-18	2014-03-19	Lapsed	China	Integrated Circuit Inductors With Directed Magnetic Flux Lines For Magnetic Coupling Reduction
2012500769		2010-12-13		Abandoned	Japan	Integrated Circuit Inductors With Directed Magnetic Flux Lines For Magnetic Coupling Reduction
12516301	8143696	2009-05-26	2012-03-27	Granted	United States of America	Integrated Circuit Inductors With Reduced Magnetic Coupling
10953632	7279393	2004-09-29	2007-10-09	Granted	United States of America	A Trench Isolation Structure And Method Of Manufacture Therefor
11649015	7727894	2007-01-03	2010-06-01	Lapsed	United States of America	Formation Of An Integrated Circuit Structure With Reduced Dishing In Metallization Levels
11094975	7329605	2005-03-31	2008-02-12	Granted	United States of America	Semiconductor Structure Formed Using A Sacrificial Structure
11927978	7741702	2007-10-30	2010-06-22	Granted	United States of America	Semiconductor Structure Formed Using A Sacrificial Structure
10903938	7768044	2004-07-30	2010-08-03	Granted	United States of America	Metal Capacitor Stacked With A MOS Capacitor To Provide Increased Capacitance Density
11673645	7557010	2007-02-12	2009-07-07	Granted	United States of America	Method To Improve Writer Leakage in a SiGe Bipolar Device
12476994	7898038	2009-06-02	2011-03-01	Granted	United States of America	Method To Improve Writer Leakage in SiGe Bipolar Device
10842139	7157365	2004-05-10	2007-01-02	Granted	United States of America	A Semiconductor Device Having A Dummy Conductive Via And A Method Of Manufacture Therefor
10778454	7005724	2004-02-13	2006-02-28	Lapsed	United States of America	A Semiconductor Device And A Method Of Manufacture Therefor
11167772	7811944	2005-06-27	2010-10-12	Lapsed	United States of America	A Semiconductor Device And A Method Of Manufacture Therefor
10675259	7087498	2003-09-30	2006-08-08	Lapsed	United States of America	Method for Controlling Trench Depth In Shallow Trench Isolation Features

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10706467	7254002	2003-11-12	2007-08-07	Granted	United States of America	Reverse Conduction Protection Method And Apparatus For A Dual Power Supply Driver
10716299	6910907	2003-11-18	2005-06-28	Lapsed	United States of America	Contact For Use In An Integrated Circuit And A Method Of Manufacture Therefor
10895574	7033257	2004-07-21	2006-04-25	Lapsed	United States of America	Carrier Head For Chemical Mechanical Polishing
11201039	7700491	2005-08-10	2010-04-20	Lapsed	United States of America	Stringer Elimination In A BICMOS Process
11205382	7172496	2005-08-17	2007-02-06	Granted	United States of America	Method And Apparatus For Cleaning Slurry Depositions From A Water Carrier
10382142	6828628	2003-03-05	2004-12-07	Granted	United States of America	Diffused MOS Devices With Strained Silicon Portions And Methods For Forming Same
10435870	6973637	2003-05-12	2005-12-06	Lapsed	United States of America	Process For The Selective Control Of Feature Size In Lithographic Processing
10953585	7084648	2004-09-29	2006-08-01	Lapsed	United States of America	Semiconductor Testing
10260694	6828561	2002-09-30	2004-12-07	Lapsed	United States of America	Apparatus And Method For Detecting Alpha Particles
10262654	6738294	2002-09-30	2004-05-18	Granted	United States of America	Electronic Fingerprinting Of Semiconductor Integrated Circuits
10898792	6963215	2004-07-26	2005-11-08	Lapsed	United States of America	Operation Of Semiconductor Devices Subject To Hot Carrier Injection
10799279	6951510	2004-03-12	2005-10-04	Lapsed	United States of America	Chemical Mechanical Polishing Pad With Grooves Alternating Between A Larger Groove Size And A Smaller Groove Size
10925555	7157375	2004-08-25	2007-01-02	Granted	United States of America	Methods Of Downstream Microwave Photoresist Removal And Via Clean, Particularly Following Stop-On TiN Etching
10768771	7034653	2004-01-30	2006-04-25	Lapsed	United States of America	Semiconductor Resistor
10699021	6919228	2003-10-31	2005-07-19	Lapsed	United States of America	Methods And Apparatus For The Detection Of Damaged Regions On Dielectric Film Or Other Portions Of A Die
09966779	6548422	2001-09-27	2003-04-15	Granted	United States of America	Method And Structure For Oxide/Silicon Nitride Interface Substructure Improvements
02223899	2383686	2002-09-26	2006-03-29	Lapsed	United Kingdom	Method And Structure For Oxide/Silicon Nitride Interface Substructure Improvements
1020020058733	10-0869913	2002-09-27	2008-11-17	Granted	Korea, Republic of (KR)	Method And Structure For Oxide/Silicon Nitride Interface Substructure Improvements
091122325	NI-190044	2002-09-27	2003-11-11	Granted	Taiwan	Method And Structure For Oxide/Silicon Nitride Interface Substructure Improvements
10061475	6767797	2002-02-01	2004-07-27	Granted	United States of America	Method Of Fabricating Complementary Self-Aligned Bipolar Transistors
09964227	6764930	2001-09-26	2004-07-20	Granted	United States of America	Method And Structure For Modular, Highly Linear MOS Capacitors Using Nitrogen Implantation
09689030	6544907	2000-10-12	2003-04-08	Granted	United States of America	A Method Of Forming A High Quality Gate Oxide Layer Having A Uniform Thickness

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09833251	6458696	2001-04-11	2002-10-01	Granted	United States of America	Plated Through Hole Interconnections
09968243	6607927	2001-09-28	2003-08-19	Granted	United States of America	Method And Apparatus For Monitoring In-Line Copper Contamination
10051937	6555852	2002-01-17	2003-04-29	Granted	United States of America	Bipolar Transistor Having An Emitter Comprised Of A Semi-Insulating Material
09727195	6432814	2000-11-30	2002-08-13	Granted	United States of America	Method Of Manufacturing An Interconnect Structure Having A Passivation Layer For Preventing Subsequent Processing Reactions
10038371	6879046	2002-01-02	2005-04-12	Granted	United States of America	Split Barrier Layer Including Nitrogen-Containing Portion And Oxygen-Containing Portion
06003727	2422721	2002-12-03	2006-09-13	Lapsed	United Kingdom	Split Barrier Layer Including Nitrogen-Containing Portion And Oxygen-Containing Portion
06003743	2422722	2002-12-03	2006-09-13	Lapsed	United Kingdom	Split Barrier Layer Including Nitrogen-Containing Portion And Oxygen-Containing Portion
1020030000063	759721	2003-01-02	2007-09-12	Granted	Korea, Republic of (KR)	Split Barrier Layer Including Nitrogen-Containing Portion And Oxygen-Containing Portion
02281962	2387027	2002-12-03	2006-07-12	Lapsed	United Kingdom	Split Barrier Layer Including Nitrogen-Containing Portion And Oxygen-Containing Portion
2002376124	4422403	2002-12-26	2009-12-11	Granted	Japan	Split Barrier Layer Including Nitrogen-Containing Portion And Oxygen-Containing Portion
091135431	I281224	2002-12-06	2007-05-11	Granted	Taiwan	Split Barrier Layer Including Nitrogen-Containing Portion And Oxygen-Containing Portion
09863437	6610464	2001-05-24	2003-08-26	Granted	United States of America	Process For Patterning A Membrane
09853317	6605529	2001-05-11	2003-08-12	Lapsed	United States of America	Method Of Creating Hydrogen Isotope Reservoirs In A Semiconductor Device
09636447	6426263	2000-08-11	2002-07-30	Granted	United States of America	A Method For Making A Merged Contact Window In A Transistor To Electrically Connect The Gate To Either The Source Or The Drain
10259256	6730600	2002-09-27	2004-05-04	Granted	United States of America	Method Of Dry Etching A Semiconductor Device In The Absence Of A Plasma
09767477	6750528	2001-01-23	2004-06-15	Granted	United States of America	Bipolar Device
09887938	6716488	2001-06-22	2004-04-06	Granted	United States of America	Ferrite Film Formation Method And Apparatus
1020020081092	10-927808	2002-12-18	2009-11-13	Granted	Korea, Republic of (KR)	Polysilicon Bounded Snapback Device
021571988	02157198.8	2002-12-19	2007-11-28	Granted	China	Polysilicon Bounded Snapback Device
02294486	2387271	2002-12-18	2005-09-28	Lapsed	United Kingdom	Polysilicon Bounded Snapback Device
2002368138	4477298	2002-12-19	2010-03-19	Lapsed	Japan	Polysilicon Bounded Snapback Device
10024803	6534834	2001-12-19	2003-03-18	Granted	United States of America	Polysilicon Bounded Snapback Device
091136669	I255028	2002-12-19	2006-05-11	Lapsed	Taiwan	Polysilicon Bounded Snapback Device
09878690	6506673	2001-06-11	2003-01-14	Granted	United States of America	Method Of Forming A Reverse Gate Structure With A Spin On Glass Process

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
10061542	6730603	2001-10-25	2004-05-04	Granted	United States of America	System And Method Of Determining A Polishing Endpoint By Monitoring Signal Intensity
09631545	6627885	2000-08-03	2003-09-30	Granted	United States of America	A Method Of Focused Ion Beam Pattern Transfer Using A Smart Dynamic Template
09902358	6511872	2001-07-10	2003-01-28	Granted	United States of America	Device Having A High Dielectric Constant Material And A Method Of Manufacture Thereof
09541792	6508363	2000-03-31	2003-01-21	Granted	United States of America	Slurry Container
10259254	6972083	2002-09-27	2005-12-06	Lapsed	United States of America	Electrochemical Method And System For Monitoring Hydrogen Peroxide Concentration In Slurries
09882911	6864547	2001-06-15	2005-03-08	Lapsed	United States of America	Semiconductor Device Having A Ghost Source/Drain Region And A Method Of Manufacture Therefor
09564659	6402599	2000-05-03	2002-06-11	Granted	United States of America	Slurry Recirculation System For Reduced Slurry Drying
09634021	6448581	2000-08-08	2002-09-10	Granted	United States of America	Mitigation Of Deleterious Effects Of Micropipes In Silicon Carbide Devices
09756965	6664800	2001-01-08	2003-12-16	Granted	United States of America	Non-Contact Method For Determining Quality Of Semiconductor Dielectrics
09634401	6475842	2000-08-09	2002-11-05	Granted	United States of America	Novel Process For Gate Oxide Side-Wall Protection From Plasma Damage To Form Highly Reliable Gate Dielectrics
09967435	6641746	2001-09-28	2003-11-04	Granted	United States of America	Control Of Semiconductor Processing
09488899	6471925	2000-01-21	2002-10-29	Granted	United States of America	Method For Treating An Effluent Gas During Semiconductor Processing
09521268	6274490	2000-03-08	2001-08-14	Granted	United States of America	High Pressure Anneal For Semiconductor Devices
09419259	6340327	1999-10-15	2002-01-22	Granted	United States of America	Wafer Polishing Apparatus And Process
09567373	6519542	2000-05-09	2003-02-11	Granted	United States of America	Method Of Testing An Unknown Sample With An Analytical Tool
09567359	6519543	2000-05-09	2003-02-11	Granted	United States of America	Calibration Method For Quantitative Elemental Analysis
09578894	6716657	2000-05-26	2004-04-06	Granted	United States of America	Method For Interconnecting Arrays Of Micromechanical Devices
09419453	6250991	1999-10-15	2001-06-26	Granted	United States of America	Bearing Substitute For Wafer Polishing Arm
09755826	7927939	2001-01-04	2011-04-19	Granted	United States of America	Method of Manufacturing a Laterally Diffused Metal Oxide Semiconductor Device
12555082	7927940	2009-09-08	2011-04-19	Granted	United States of America	Method of Manufacturing a Laterally Diffused Metal Oxide Semiconductor Device
09733570	6576522	2000-12-08	2003-06-10	Granted	United States of America	Methods For Deuterium Sintering
003086840	1091416	2000-10-03	2008-12-31	Lapsed	United Kingdom	GaAs MOSFET Having Low Capacitance and On-Resistance And Method Of Manufacturing The Same
003086840	1091416	2000-10-03	2008-12-31	Lapsed	France	GaAs MOSFET Having Low Capacitance and On-Resistance And Method Of Manufacturing The Same
09927194	6682962	2001-08-10	2004-01-27	Lapsed	United States of America	GaAs MOSFET Having Low Capacitance and On\(miResistance And Method Of Manufacturing The Same

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003086840	60041233.4	2000-10-03	2008-12-31	Lapsed	Germany (Federal Republic of)	GaAs MOSFET Having Low Capacitance and On-Resistance And Method Of Manufacturing The Same
09412847	6369408	1999-10-06	2002-04-09	Granted	United States of America	GaAs MOSFET Having Low Capacitance and On-Resistance And Method Of Manufacturing The Same
2000307041	4558911	2000-10-06	2010-07-30	Lapsed	Japan	GaAs MOSFET Having Low Capacitance and On-Resistance And Method Of Manufacturing The Same
09397459	6406999	1999-09-16	2002-06-18	Granted	United States of America	A Semicondutor Device Having Reduced Line Width Variations Between Tightly Spaced And Isolated Features
09397458	6395639	1999-09-16	2002-05-28	Granted	United States of America	A Process For Improving Line Width Variations Between Tightly Spaced And Isolated Features In Integrated Circuits
09465633	6524971	1999-12-17	2003-02-25	Granted	United States of America	A Method Of Deposition Of Films
09413149	6324933	1999-10-06	2001-12-04	Granted	United States of America	Planar Movable Stage Mechanism
09667046	6989602	2000-09-21	2006-01-24	Granted	United States of America	Dual Damascene Process With No Passing Metal Features
09430316	6403454	1999-10-29	2002-06-11	Granted	United States of America	Silicon Semiconductor Devices With ä-Doped Layers
09727014	6633032	2000-11-30	2003-10-14	Granted	United States of America	Mass Spectrometer Particle Counter
09589816	6313007	2000-06-07	2001-11-06	Granted	United States of America	Semiconductor Device, Trench Isolation Structure And Methods Of Format Ion
09418078		1999-10-14		Abandoned	United States of America	Method For Chemical Mechanical Polishing Endpoint Detection Using A Hydrogen Sensor
09418087	6293847	1999-10-14	2001-09-25	Granted	United States of America	Apparatus For Chemical Mechanical Polishing Endpoint Detection Using A Hydrogen Sensor
09516836	6368200	2000-03-02	2002-04-09	Granted	United States of America	Polishing Pads From Closed\(miCelled Elastomer Foam
09633241	6410419	2000-08-07	2002-06-25	Granted	United States of America	Silicon Carbide Barrier Layers For Porous Low Dielectric Constant Materials
09553938	6354928	2000-04-21	2002-03-12	Granted	United States of America	Polishing Apparatus With Carrier Ring And Carrier Head Employing Like Polarities
09504306	6358807	2000-02-15	2002-03-19	Granted	United States of America	Bipolar Semiconductor Device And Method Of Forming Same Having Reduced Transient Enhanced Diffusion
09384769	6140170	1999-08-27	2000-10-31	Granted	United States of America	Manufacture Of Complementary MOS And Bipolar Integrated Circuits
09276034	6169036	1999-03-25	2001-01-02	Granted	United States of America	Method For Cleaning Via Openings In Integrated Circuit Manufacturing
09604020	6593151	2000-06-26	2003-07-15	Lapsed	United States of America	Method For Regular Detection Of Phosphorus Striations In A Multi\(miLayered Film Stack

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09431198	6214732	1999-11-01	2001-04-10	Granted	United States of America	Chemical Mechanical Polishing Endpoint Detection By Monitoring Component Activity In Effluent Slurry
09432721	6258231	1999-11-01	2001-07-10	Granted	United States of America	Chemical Mechanical Polishing Endpoint Apparatus Using Component Activity In Effluent Slurry
09366362	6299519	1999-08-03	2001-10-09	Granted	United States of America	Apparatus And Method For Removing A Polishing Pad From A Platen
09338735	6114234	1999-06-23	2000-09-05	Granted	United States of America	Method Of Making A Semiconductor With Copper Passivating Film
09172456	6228277	1998-10-14	2001-05-08	Granted	United States of America	Etch Endpoint Detection
09349538	6444536	1999-07-08	2002-09-03	Granted	United States of America	Method For Fabricating Bipolar Transistors
09337966	6362475	1999-06-22	2002-03-26	Granted	United States of America	Scanning Electron Microscope\(slEnergy Dispersive Spectroscopy Sample Preparation Method And Sample Produced Thereby
09197412	6146909	1998-11-21	2000-11-14	Granted	United States of America	Detecting Trace Levels Of Copper
09353860	6097484	1999-07-15	2000-08-01	Granted	United States of America	Location Of Defects Using Dye Penetration
09426124	6682999	1999-10-22	2004-01-27	Lapsed	United States of America	Semiconductor Device Having Multilevel Interconnections And Method Of Manufacture Thereof
09327793	6124158	1999-06-08	2000-09-26	Granted	United States of America	Method of Reducing Carbon Contamination of a Thin Dielectric Film by Using Gaseous Organic Precursors, Inert Gas, and Ozone to React with Carbon Contaminants
09684015	6251697	2000-10-06	2001-06-26	Granted	United States of America	A Non-Contact Method For Monitoring And Controlling Plasma Charging Damage In A Semiconductor Device
09441676	6331460	1999-11-17	2001-12-18	Granted	United States of America	A Method Of Fabricating A MOM Capacitor Having A Metal Silicide Barrier
09441561	6335557	1999-11-17	2002-01-01	Granted	United States of America	Metal Silicide As A Barrier For MOM Capacitors In CMOS Technologies
09325624		1999-06-03		Abandoned	United States of America	Tungsten Silicide Nitride As A Barrier For High Temperature Anneals To Improve Hot Carrier Reliability
09324946	6365511	1999-06-03	2002-04-02	Granted	United States of America	Tungsten Silicide Nitride As A Barrier For High Temperature Anneals To Improve Hot Carrier Reliability
09088852	6097195	1998-06-02	2000-08-01	Granted	United States of America	Methods And Apparatus For Increasing Metal Density In An Integrated CircuitWhile Also Reducing Parasitic Capacitance
09081406	6056630	1998-05-19	2000-05-02	Granted	United States of America	Polishing Apparatus With Carrier Head Pivoting Device
09082162	6083838	1998-05-20	2000-07-04	Granted	United States of America	Method Of Planarizing A Surface On A Semiconductor Wafer
09205414	6140187	1998-12-02	2000-10-31	Granted	United States of America	Device And In Situ Furnace Gate Stack Process For Metal Oxide Semiconductors

Schedule B(1)(b) – Semic Processing B

AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09099827	6075273	1998-06-18	2000-06-13	Granted	United States of America	Integrated Circuit Device In Which Gate Oxide Thickness Is Selected To Control Plasma Damage During Device Fabrication
09028966	5932379	1998-02-24	1999-08-03	Granted	United States of America	Repairing Fractured Wafers In Semiconductor Manufacturing
09196486	6149778	1998-11-19	2000-11-21	Granted	United States of America	Article Comprising Fluorinated Amorphous Carbon And Process For Fabricating Article
09059359	6156665	1998-04-13	2000-12-05	Granted	United States of America	Trilayer Lift-Off Process For Semiconductor Device Metalization
09053908	6073476	1998-04-02	2000-06-13	Granted	United States of America	Calibration Sample For Particle Analyzers And Method For Making Same
09218574	6410986	1998-12-22	2002-06-25	Granted	United States of America	Multi\(miLayered Titanium Nitride Barrier Structure
09138741	6121624	1998-08-24	2000-09-19	Granted	United States of America	Method for Controlled Implantation Of Elements Into The Surface Or Near Surface Of A Substrate
08922487	6004827	1997-09-03	1999-12-21	Expired	United States of America	Integrated Circuit Processing
09352674	6251486	1999-07-11	2001-06-26	Expired	United States of America	Method For Fabricating An Article Comprising A Ladder Siloxane Polymer AndResultant Article
08868269	5844261	1997-06-03	1998-12-01	Expired	United States of America	InAlGaP Devices
09369105	6153078	1999-08-05	2000-11-28	Granted	United States of America	Process For Forming Device Comprising Metallized Magnetic Substrates
09069215	6303961	1998-04-29	2001-10-16	Granted	United States of America	Improved Complementary Semiconductor Devices
08869944	5856008	1997-06-05	1999-01-05	Expired	United States of America	Article Comprising Magnetoresistive Material
09056555	6576521	1998-04-07	2003-06-10	Granted	United States of America	Method Of Forming Semiconductor Device With LDD Structures
08807310	5756887	1997-02-27	1998-05-26	Expired	United States of America	Mechanism For Changing A Probe Balance Beam In A Scanning Probe Microscope
08871383	5945355	1997-06-09	1999-08-31	Expired	United States of America	Integrated Circuit Fabrication
08760845	5746931	1996-12-05	1998-05-05	Expired	United States of America	Method And Apparatus For Chemical-Mechanical Polishing Of Diamond
08898261	5877407	1997-07-22	1999-03-02	Expired	United States of America	Plasma Etch Endpoint Detection Process
08798327	5939742	1997-02-10	1999-08-17	Expired	United States of America	Field-Effect Photo-Transistor
08657255	5625206	1996-06-03	1997-04-29	Expired	United States of America	High-Speed Double-Heterostructure Bipolar Transistor Devices
08846967	5969337	1997-04-29	1999-10-19	Expired	United States of America	Integrated Photosensing Device For Active Pixel Sensor Imagers
08814817	5793093	1997-03-11	1998-08-11	Expired	United States of America	Substrate Isolation For Analog/Digital IC Chips
08778123	6018272	1997-01-02	2000-01-25	Expired	United States of America	Linearization Of Resistance
08782010	6153452	1997-01-07	2000-11-28	Expired	United States of America	Method Of Manufacturing Semiconductor Devices Having Improved Polycide Integrity Through Introduction Of A Silicon Layer Within The Polycide Structure
08509267	5664884	1995-07-31	1997-09-09	Expired	United States of America	Apparatus For Determining The Thermal Resistivity Of Electrically Insulating Crystalline Materials
08511845	5670391	1995-08-07	1997-09-23	Expired	United States of America	Process For Reducing Transient Diffusion Of Dopant Atoms
08819828	6013934	1997-03-18	2000-01-11	Expired	United States of America	Semiconductor Structure For Thermal Shutdown Protection

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08917955	5930587	1997-08-27	1999-07-27	Expired	United States of America	Stress Migration Evaluation Method
08516368	5596413	1995-08-17	1997-01-21	Expired	United States of America	Sub-Micron Through-the-Lens Positioning utilizing out of phase segmented gratings
08569025	5686359	1995-12-07	1997-11-11	Expired	United States of America	Titanium Silicide Process
08553118	5654903	1995-11-07	1997-08-05	Expired	United States of America	A Method and Apparatus for Real Time Monitoring of Wafer Attributes in a Plasma Etch Process
08789892	5700725	1997-01-29	1997-12-23	Expired	United States of America	Apparatus And Method For Making Integrated Circuits
08550879	5636002	1995-10-31	1997-06-03	Expired	United States of America	Auxiliary Mask Features For Enhancing The Resolution Of Photolithography
08454976	5866436	1995-05-31	1999-02-02	Expired	United States of America	Process Of Manufacturing An Integrated Circuit Having An Interferometrically Profiled Mounting Film
08397346	5721445	1995-03-02	1998-02-24	Expired	United States of America	Semiconductor Device With Increased Parasitic Emitter Resistance And Improved Latch-Up Immunity
08939422	6168904	1997-09-29	2001-01-02	Expired	United States of America	Integrated Circuit Fabrication
08287989	5500391	1994-08-09	1996-03-19	Expired	United States of America	Method For Making A Semiconductor Device Including Diffusion Control
08431341	5607543	1995-04-28	1997-03-04	Expired	United States of America	Integrated Circuit Etching

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09045062	6103615	1998-03-19	2000-08-15	Granted	United States of America	Corrosion sensitivity structures for vias and contact holes in integrated circuits
09464225	6278129	1999-12-15	2001-08-21	Granted	United States of America	Corrosion sensitivity structures for vias and contact holes in integrated circuits
08771955	5776551	1996-12-23	1998-07-07	Expired	United States of America	Use of plasma activated NF3 to clean solder bumps on a device
08922141	5786073	1997-08-29	1998-07-28	Expired	United States of America	Integrated circuit comprising solder bumps
08904530	5911112	1997-08-01	1999-06-08	Expired	United States of America	Method for forming electrical connections between a semiconductor die and a semiconductor package
08608679	5793104	1996-02-29	1998-08-11	Expired	United States of America	Apparatus for forming electrical connections between a semiconductor die and a semiconductor package
08936829	5970321	1997-09-25	1999-10-19	Expired	United States of America	Method of fabricating a microelectronic package having polymer ESD protection
08595021	5869869	1996-01-31	1999-02-09	Expired	United States of America	Microelectronic device with thin film electrostatic discharge protection structure
08723140	5955762	1996-10-01	1999-09-21	Expired	United States of America	Microelectronic package with polymer ESD protection
08909312	5885855	1997-08-14	1999-03-23	Expired	United States of America	Method for distributing connection pads on a semiconductor die
08747325	5952726	1996-11-12	1999-09-14	Expired	United States of America	Flip chip bump distribution on die
08989098		1997-12-11		Abandoned	United States of America	Integrated Circuit Package.
08648350	5700723	1996-05-15	1997-12-23	Expired	United States of America	Method of packaging an integrated circuit
08810304		1997-02-28		Abandoned	United States of America	Microelectronioc Integrated Circuit Mounted On Circuit Board With Solder Column Grid Array Interconnection (As Amended)
08595022	5639696	1996-01-31	1997-06-17	Expired	United States of America	Microelectronic integrated circuit mounted on circuit board with solder column grid array interconnection, and method of fabricating the solder column grid array
08778909	5784780	1997-01-03	1998-07-28	Expired	United States of America	Method of mounting a flip-chip
08538631	5637920	1995-10-04	1997-06-10	Expired	United States of America	High contact density ball grid array package for flip-chips
08653591		1996-05-24		Abandoned	United States of America	Powdered Metal Heat Sink With Increased Surface Area

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
08578966	5814536	1995-12-27	1998-09-29	Expired	United States of America	Method of manufacturing powdered metal heat sinks having increased surface area
08854780	5869891	1997-05-12	1999-02-09	Expired	United States of America	Powdered Metal Heat Sink With Increased Surface Area
08718852	5827777	1996-09-24	1998-10-27	Expired	United States of America	Method of making a barrier metal technology for tungsten plug interconnection
08378027	5600182	1995-01-24	1997-02-04	Expired	United States of America	Barrier metal technology for tungsten plug interconnection
08916025	5872026	1997-08-21	1999-02-16	Expired	United States of America	Process of Fabricating An Integrated Circuit Die Package Having a Plurality of Pins
08485060	5739584	1995-06-07	1998-04-14	Expired	United States of America	Multiple pin die package
10306064	6597189	2002-11-27	2003-07-22	Granted	United States of America	Socketless/boardless test interposer card
11324119	RE41516	2005-12-30	2010-08-17	Lapsed	United States of America	Socketless/Boardless Test Interposer Card
10428200	6771085	2003-04-30	2004-08-03	Lapsed	United States of America	Socketless/boardless test interposer card
07856905		1992-05-14		Abandoned	United States of America	Encapsulation Of Electronic Components
08331251	5537342	1994-10-28	1996-07-16	Expired	United States of America	Encapsulation of electronic components
08484177	5663872	1995-06-07	1997-09-02	Expired	United States of America	Encapsulation of electronic components
11277188	8049340	2006-03-22	2011-11-01	Granted	United States of America	Device For Avoiding Parasitic Capacitance in an Integrated Circuit Package
13252632	8288269	2011-10-04	2012-10-16	Granted	United States of America	Methods for Avoiding Parasitic Capacitance in an Integrated Circuit Package
14045081		2013-10-03		Abandoned	United States of America	Alternate Pad Structures/Passivation Integration Schemes to Reduce or Eliminate IMC Cracking in Post Wire Bonded Dies During Cu/Low-K BEOL Processing
11283219	8552560	2005-11-18	2013-10-08	Granted	United States of America	Alternate Pad Structures/Passivation Integration Schemes to Reduce or Eliminate IMC Cracking in Post Wire Bonded Dies During Cu/Low-K BEOL Processing
11964920	7565592	2007-12-27	2009-07-21	Lapsed	United States of America	Failure Analysis and Testing of Semi-Conductor Devices Using Intelligent Software on Automated Test Equipment (ATE)

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
11670031	7430700	2007-02-01	2008-09-30	Granted	United States of America	Failure analysis and testing of semi-conductor devices using intelligent software on automated test equipment (ATE)
11028695	7203877	2005-01-04	2007-04-10	Granted	United States of America	Failure analysis and testing of semi-conductor devices using intelligent software on automated test equipment (ATE)
12253403	7960812	2008-10-17	2011-06-14	Granted	United States of America	Electrical Devices Having Adjustable Capacitance
10746824	7456716	2003-12-24	2008-11-25	Granted	United States of America	Electrical Devices Having Adjustable Electrical Characteristics
10926631	7109589	2004-08-26	2006-09-19	Granted	United States of America	Integrated Circuit With Substantially Perpendicular Wire Bonds
11494221	7465655	2006-07-27	2008-12-16	Granted	United States of America	Integrated Circuit With Substantially Perpendicular Wire Bonds
09162247	6087732	1998-09-28	2000-07-11	Granted	United States of America	Bond Pad For A Flip Chip Package, And Method Of Forming The Same
09503814	6187658	2000-02-15	2001-02-13	Granted	United States of America	Bond Pad For A Flip Chip Package, And Method Of Forming The Same
10921497		2004-08-18		Abandoned	United States of America	Multi-Level Redistribution Layer Traces for Reducing Current Crowding in FlipChip Solder Bumps
10327333	6818996	2002-12-20	2004-11-16	Granted	United States of America	Multi-level redistribution layer traces for reducing current crowding in flipchip solder bumps
09489302	6369448	2000-01-21	2002-04-09	Granted	United States of America	Vertically integrated flip chip semiconductor package
09993466	6558978	2001-11-05	2003-05-06	Granted	United States of America	Chip-over-chip integrated circuit package
11015534	7224047	2004-12-18	2007-05-29	Granted	United States of America	Semiconductor Device Package With Reduced Leakage
11788346	7541669	2007-04-19	2009-06-02	Granted	United States of America	Semiconductor Device Package With Base Features to Reduce Leakage
09642216	6319617	2000-08-18	2001-11-20	Granted	United States of America	Oxide-Bondable Solder
09466449	6306516	1999-12-17	2001-10-23	Granted	United States of America	Article Comprising Oxide-Bondable Solder
09006356	6064113	1998-01-13	2000-05-16	Granted	United States of America	Semiconductor device package including a substrate having bonding fingers within an electrically conductive ring surrounding a die area and a combined power and ground plane to stabilize signal path impedances
09428164	6137168	1999-10-27	2000-10-24	Granted	United States of America	Semiconductor package with traces routed underneath a die

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
09618143		2000-07-17		Abandoned	United States of America	Semiconductor Package With Traces Routed Underneath A Die
08901489	5885848	1997-07-28	1999-03-23	Expired	United States of America	Ball Grid Array Package With Inexpensive Threaded Secure Locking Mechanism To Allow Removal Of A Threaded Heat Sink Therefrom
08724076	5789813	1996-09-30	1998-08-04	Expired	United States of America	Ball grid array package with inexpensive threaded secure locking mechanism to allow removal of a threaded heat sink therefrom
08427674		1995-04-24		Abandoned	United States of America	Electronic System Including Packaged Integrated Circuits With Heat Spreading Stand-Off Support Members
08323817	5673479	1994-10-17	1997-10-07	Expired	United States of America	Method For Mounting A Microelectronic Circuit Peripherally-Leaded Package Including Integral Support Member With Spacer
08646014		1996-05-07		Abandoned	United States of America	Microelectronic Circuit Structure
08427306		1995-04-24		Abandoned	United States of America	Location And Standoff Pins For Chip On Tape
08170102	5410451	1993-12-20	1995-04-25	Expired	United States of America	Location And Standoff Pins For Chip On Tape
08710573	5898575	1996-09-19	1999-04-27	Expired	United States of America	Support Assembly For Mounting An Integrated Circuit Package On A Surface
08713174	5896651	1996-09-12	1999-04-27	Expired	United States of America	Method For Mounting A Microelectronic Circuit Package
08646037	5923538	1996-05-07	1999-07-13	Expired	United States of America	Support member for mounting a microelectronic circuit package
08903241	6008991	1997-07-24	1999-12-28	Expired	United States of America	Electronic system including packaged integrated circuits with heat spreading standoff support members
12139185	7919354	2008-06-13	2011-04-05	Granted	United States of America	Asymmetric Alignment of Substrate Interconnect to Semiconductor Die
11260334	7405476	2005-10-27	2008-07-29	Granted	United States of America	Asymmetric alignment of substrate interconnect to semiconductor die
09802424	6518193	2001-03-09	2003-02-11	Granted	United States of America	Substrate processing system
10322974		2002-12-18		Abandoned	United States of America	Substrate Processing System
08424828	6313519	1995-04-19	2001-11-06	Granted	United States of America	Support for semiconductor bond wires

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
07914621		1992-07-15		Abandoned	United States of America	Support For Semiconductor Bond Wires
08506164	5744084	1995-07-24	1998-04-28	Expired	United States of America	Method of improving molding of an overmolded package body on a substrate
08920430	5927505	1997-08-29	1999-07-27	Expired	United States of America	Overmolded package body on a substrate
10007247	6678950	2001-11-01	2004-01-20	Granted	United States of America	Method for forming a bonding pad on a substrate
10694486		2003-10-27		Abandoned	United States of America	Bonding Pad Design
08908404	5990543	1997-08-07	1999-11-23	Expired	United States of America	Reframed chip-on-tape die
08635288	6043100	1996-04-19	2000-03-28	Expired	United States of America	Chip on tape die reframe process
09477306	6492253	2000-01-04	2002-12-10	Granted	United States of America	Method for programming a substrate for array-type packages
09006584	6054767	1998-01-13	2000-04-25	Granted	United States of America	Programmable substrate for array-type packages
12174479	7829424	2008-07-16	2010-11-09	Lapsed	United States of America	Package Configuration And Manufacturing Method Enabling The Addition Of Decoupling Capacitors To Standard Package Designs
11078052	7508062	2005-03-11	2009-03-24	Lapsed	United States of America	Package Configuration And Manufacturing Method Enabling The Addition Of Decoupling Capacitors To Standard Package Designs
07935449	5300815	1992-08-25	1994-04-05	Expired	United States of America	Technique of increasing bond pad density on a semiconductor die
08430399	5635424	1995-04-28	1997-06-03	Expired	United States of America	High-density bond pad layout arrangements for semiconductor dies, and connecting to the bond pads
08688148		1996-07-29		Abandoned	United States of America	Overmolded Semiconductor Package
07975185	5399898	1992-11-12	1995-03-21	Expired	United States of America	Multi-chip semiconductor arrangements using flip chip dies
08270123		1994-07-01		Abandoned	United States of America	Semiconductor Packaging Technique Yielding Increased Inner Lead Count For A Given Die-Receiving Area
08015947		1993-02-10		Abandoned	United States of America	Floorplanning Techniques Using Multi-Partitioning Based On A Partitions Cost Factor For Non-Square Shaped Partitions
07938690		1992-09-01		Abandoned	United States of America	Ball Bump Array Semiconductor Packages

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
07400572		1989-08-28		Abandoned	United States of America	Method And Apparatus For Isolation Of Flux Materials In Flip-Chip Manufacturing
08105547	5504035	1993-08-12	1996-04-02	Expired	United States of America	Process for solder ball interconnecting a semiconductor device to a substrate using a noble metal foil embedded interposer substrate
08105269		1993-08-12		Abandoned	United States of America	Optically Transmissive Preformed Planar Structures
08679949	5834799	1996-07-15	1998-11-10	Expired	United States of America	Optically transmissive preformed planar structures
07917894		1992-07-21		Abandoned	United States of America	Ball Bump Array Semiconductor Packages
08382147		1995-02-01		Abandoned	United States of America	Ball Bump Array Semiconductor Packages
07947854	5248903	1992-09-18	1993-09-28	Expired	United States of America	Composite bond pads for semiconductor devices
07984206	5284797	1992-11-30	1994-02-08	Expired	United States of America	Semiconductor bond pads
08387154	5565385	1995-02-10	1996-10-15	Expired	United States of America	Semiconductor bond pad structure and increased bond pad count per die
08470945	5821624	1995-06-05	1998-10-13	Expired	United States of America	Semiconductor device assembly techniques using preformed planar structures
07993188		1992-12-18		Abandoned	United States of America	Mounting And Connecting Non-Square Semiconductor Dies
08476431	5744856	1900-01-01	1998-04-28	Expired	United States of America	Non-Square Die For Integrated Circuit And Systems Containing The Same
08194241	5410805	1994-02-10	1995-05-02	Expired	United States of America	Method And Apparatus For Isolation Of Flux Materials In Flip-Chip Manufacturing
08079499	5434750	1993-06-18	1995-07-18	Expired	United States of America	Partially-Molded, Pcb Chip Carrier Package For Certain Non-Square Die Shapes
08720219	5744858	1996-09-26	1998-04-28	Expired	United States of America	Semiconductor packaging technique yielding increased inner lead count for a given die-receiving area
07969862		1992-10-28		Abandoned	United States of America	Overmolded Semiconductor Package
08331263		1994-10-28		Abandoned	United States of America	Overmolded Semiconductor Package
08429605	5557150	1995-04-27	1996-09-17	Expired	United States of America	Overmolded semiconductor package

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
07981096	5299730	1992-11-24	1994-04-05	Expired	United States of America	Method and apparatus for isolation of flux materials in flip-chip manufacturing
07775009	5168346	1991-10-11	1992-12-01	Expired	United States of America	Method and apparatus for isolation of flux materials in flip-chip manufacturing
08428323	5569963	1995-04-25	1996-10-29	Expired	United States of America	Preformed planar structures for semiconductor device assemblies
08105838	5347162	1993-08-12	1994-09-13	Expired	United States of America	Preformed planar structures employing embedded conductors
08432535	5594626	1995-05-02	1997-01-14	Expired	United States of America	Partially-molded, PCB chip carrier package for certain non-square die shapes
07916328	5340772	1992-07-17	1994-08-23	Expired	United States of America	Method of increasing the layout efficiency of dies on a wafer and increasing the ratio of I/O area to active area per die
07978483	5341024	1992-11-18	1994-08-23	Expired	United States of America	Method of increasing the layout efficiency of dies on a wafer, and increasing the ratio of I/O area to active area per die
08664146	5729894	1996-06-14	1998-03-24	Expired	United States of America	Method of assembling ball bump grid array semiconductor packages
07933430	5329157	1992-08-21	1994-07-12	Expired	United States of America	Semiconductor packaging technique yielding increased inner lead count for a given die-receiving area
08251058	5441917	1994-05-31	1995-08-15	Expired	United States of America	Method of laying out bond pads on a semiconductor die
08416457	5532934	1995-04-03	1996-07-02	Expired	United States of America	Floorplanning technique using multi-partitioning based on a partition cost factor for non-square shaped partitions
07576182	5111279	1990-08-30	1992-05-05	Expired	United States of America	Apparatus for isolation of flux materials in flip-chip manufacturing
08106157	5489804	1993-08-12	1996-02-06	Expired	United States of America	Flexible preformed planar structures for interposing between a chip and a substrate
07995644	5404047	1992-12-18	1995-04-04	Expired	United States of America	Semiconductor die having a high density array of composite bond pads
07834182	5262927	1992-02-07	1993-11-16	Expired	United States of America	Partially-molded, PCB chip carrier package
08260078	5468681	1994-06-15	1995-11-21	Expired	United States of America	Process for interconnecting conductive substrates using an interposer having conductive plastic filled vias
13934110		2013-07-02		Abandoned	United States of America	Contact Support Pillar Structure for Flip Chip Semiconductor Devices and Method Of Manufacture Therefore
13093032	8507317	2011-04-25	2013-08-13	Granted	United States of America	Solder Bump Structure For Flip Chip Semiconductor Devices And Method Of Manufacturing Therefore

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
11459249	7952206	2006-07-21	2011-05-31	Granted	United States of America	Solder Bump Structure For Flip Chip Semiconductor Devices And Method Of Manufacture Therefore
08259439		1994-06-14		Abandoned	United States of America	Techniques For Isolating Superconducting Substrates From Heat Generated By Semiconductor Devices
08434276	5700715	1995-05-03	1997-12-23	Expired	United States of America	Process for mounting a semiconductor device to a circuit substrate
11131885	7053639	2005-05-18	2006-05-30	Granted	United States of America	Probing fixture for semiconductor wafer
09731596	6927079	2000-12-06	2005-08-09	Granted	United States of America	Method for probing a semiconductor wafer
11506680	7456498	2006-08-18	2008-11-25	Granted	United States of America	Integrated circuit package and system interface
12283820	7550839	2008-09-15	2009-06-23	Granted	United States of America	Integrated Circuit Package and System Interface
61055505		2008-05-23		Expired	United States of America	Solution For Package Cross Talk Minimization
12469985	8324019	2009-05-21	2012-12-04	Granted	United States of America	Solution For Package Cross Talk Minimization
10930590	8404960	2004-08-31	2013-03-26	Granted	United States of America	Method for Heat Dissipation on Semiconductor Device
13775922	8653357	2013-02-25	2014-02-18	Lapsed	United States of America	Method for Heat Dissipation on Semiconductor Device
12337519	8258016	2008-12-17	2012-09-04	Granted	United States of America	Semiconductor Package Having Increased Resistance to Electrostatic Discharge
11304862	7498664	2005-12-14	2009-03-03	Granted	United States of America	Semiconductor Package Having Increased Resistance to Electrostatic Discharge
11399723	7646091	2006-04-06	2010-01-12	Granted	United States of America	Semiconductor Package and Method Using Isolated VSS Plane to Accomodate High Speed Circuitry Ground Isolation
12625457	8129759	2009-11-24	2012-03-06	Granted	United States of America	Semiconductor Package and Method Using Isolated VSS Plane to Accomodate High Speed Circuitry Ground Isolation
10951430		2004-09-28		Abandoned	United States of America	Whisker-Free Lead Frames
12462069	8013428	2009-07-28	2011-09-06	Granted	United States of America	Whisker-Free Lead Frames
10979491	7352062	2004-11-02	2008-04-01	Granted	United States of America	Integrated circuit package design
10271003	6825556	2002-10-15	2004-11-30	Granted	United States of America	Integrated circuit package design with non-orthogonal die cut out

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AppNo	PatentNo	FiledDate	GrantDate	Status	Country	Title
12160553	8242378	2008-07-10	2012-08-14	Granted	United States of America	Soldering Method and Related Device for Improved Resistance to Brittle Fracture With An Intermetallic Compound Region Coupling A solder Mass to an NI Layer Which has a low Concentration of P, wherein the amount of P in the underlying NI layer is controlled as a function of the expected volume of the solder mass
13552266		2012-07-18		Abandoned	United States of America	Soldering Method and Related Device for Improved Resistance to Brittle Fracture
11469960	8319343	2006-09-05	2012-11-27	Granted	United States of America	Routing Under Bond Pad For The Replacement Of An Interconnect Layer
13656092		2012-10-19		Abandoned	United States of America	Routing Under Bond Pad For The Replacement Of An Interconnect Layer
10642706	6991147	2003-08-18	2006-01-31	Lapsed	United States of America	Insulated bonding wire tool for microelectronic packaging
09687263	6670214	2000-10-12	2003-12-30	Lapsed	United States of America	Insulated bonding wire for microelectronic packaging
10638772	6858930	2003-08-11	2005-02-22	Granted	United States of America	Multi chip module
10265751	6680532	2002-10-07	2004-01-20	Lapsed	United States of America	Multi chip module
12692209	8084857	2010-01-22	2011-12-27	Granted	United States of America	Method and Article of Manufacture for Wire Bonding with Staggered Differential Wire Bond Pairs
11065838	7675168	2005-02-25	2010-03-09	Granted	United States of America	Integrated Circuit With Staggered Differential Wire Bond Pairs
09639288	6972494	2000-08-15	2005-12-06	Granted	United States of America	Integrated Circuit Die For Wire Bonding And Flip-Chip Mounting
11158435	7541674	2005-06-22	2009-06-02	Granted	United States of America	Integrated Circuit Die For Wire Bonding And Flip-Chip Mounting
11395779	8025201	2006-03-31	2011-09-27	Granted	United States of America	Methods And Apparatus For Integrated Circuit Ball Bonding With Substantially Perpendicular Wire Bond Profiles
10786182	7074705	2004-02-25	2006-07-11	Granted	United States of America	Methods And Apparatus For Integrated Circuit Ball Bonding With Substantially Perpendicular Wire Bond Profiles
09680759	6639321	2000-10-06	2003-10-28	Granted	United States of America	Balanced coefficient of thermal expansion for flip chip ball grid array
10631328	6806119	2003-07-30	2004-10-19	Granted	United States of America	Method of balanced coefficient of thermal expansion for flip chip ball grid array
11258253	7582938	2005-10-25	2009-09-01	Lapsed	United States of America	I/O and Power ESD Protection Circuits by Enhancing Substrate-Bias In Deep-Submicron CMOS Process

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12506746	7948036	2009-07-21	2011-05-24	Granted	United States of America	I/O and Power ESD Protection Circuits by Enhancing Substrate-Bias In Deep-Submicron CMOS Process
13110581	8269280	2011-05-18	2012-09-18	Granted	United States of America	I/O and Power ESD Protection Circuits by Enhancing Substrate-Bias In Deep-Submicron CMOS Process
10676602	6979869	2003-10-01	2005-12-27	Granted	United States of America	Substrate-biased I/O and power ESD protection circuits in deep-submicron twin-well process
10939292		2004-09-10		Abandoned	United States of America	Wire Bonding Method For Copper Interconnects In Semiconductor Devices
09467253	6790757	1999-12-20	2004-09-14	Granted	United States of America	Wire Bonding Method For Copper Interconnects In Semiconductor Devices
09072369	5986343	1998-05-04	1999-11-16	Granted	United States of America	Bond Pad Design For Integrated Circuits
09305766	6207547	1999-05-05	2001-03-27	Granted	United States of America	Bond Pad Design For Integrated Circuits
12228720	7632717	2008-08-15	2009-12-15	Granted	United States of America	Plastic Overmolded Packages With Mechanically Decoupled Lid Attach Attachment
11505152	7423341	2006-08-16	2008-09-09	Granted	United States of America	Plastic Overmolded Packages With Mechanically Decoupled Lid Attach Attachment
10061518	6617181	2002-02-01	2003-09-09	Granted	United States of America	Flip chip testing
10462524	6710453	2003-06-16	2004-03-23	Granted	United States of America	Integrated circuit containing redundant core and peripheral contacts
09193832	6118177	1998-11-17	2000-09-12	Granted	United States of America	Heatspreader For A Flip Chip Device, And Method For Connecting The Heatspreader
09496989	6681482	2000-02-02	2004-01-27	Granted	United States of America	Heatspreader For A Flip\(miChip Device And Method For Connecting The Heatspreader
09244857	6068130	1999-02-05	2000-05-30	Granted	United States of America	Device And Method For Protecting Electronic Component
09580522	6554137	2000-05-30	2003-04-29	Granted	United States of America	Device And Method For Protecting Electronic Component
07940157	6077725	1992-09-03	2000-06-20	Expired	United States of America	Method and Apparatus for Assembling Multichip Modules
08479587	5564617	1995-06-07	1996-10-15	Expired	United States of America	Method And Apparatus For Assembling Multichip Modules
09461609	6409829	1999-12-15	2002-06-25	Granted	United States of America	Manufacture Of Dielectrically Isolated Integrated Circuits
10091291	6727567	2002-03-05	2004-04-27	Granted	United States of America	Integrated Circuit Device Substrates With Selective Epitaxial Growth Thickness Compensation

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09698175	6675450	2000-10-30	2004-01-13	Granted	United States of America	Method Of Manufacturing And Mounting Electronic Devices To Limit The Effects Of Parasitics
10742916		2003-12-23		Abandoned	United States of America	Method Of Manufacturing And Mounting Electronic Devices To Limit The Effects Of Parasitics
09578082	6465884	2000-05-24	2002-10-15	Granted	United States of America	Semiconductor Device With Variable Pin Locations
10218783	6833286	2002-08-14	2004-12-21	Granted	United States of America	Semiconductor Device With Variable Pin Locations
10254473	6849936	2002-09-25	2005-02-01	Granted	United States of America	System and method for using film deposition techniques to provide an antenna within an integrated circuit package
11012838		2004-12-15		Abandoned	United States of America	System and Method For Using Film Deposition Techniques to Provide an Antenna Within an Integrated Circuit Package
10229601	6781150	2002-08-28	2004-08-24	Granted	United States of America	Test structure for detecting bonding-induced cracks
10856213	6998638	2004-05-28	2006-02-14	Granted	United States of America	Test structure for detecting bonding-induced cracks
09920144		1900-01-01		Abandoned	United States of America	Adhesive Pad Having EMC Shielding Characteristics
09932307	6563198	2001-08-17	2003-05-13	Granted	United States of America	Adhesive pad having EMC shielding characteristics
08838536	6281590	1997-04-09	2001-08-28	Expired	United States of America	Circuit And Method For Providing Interconnections Among Individual Integrated Circuit Chips In A Multi-Chip Module
09873551	6465336	2001-06-04	2002-10-15	Expired	United States of America	Circuit And Method For Providing Interconnections Among Individual Integrated Circuit Chips In A Multi-Chip Module
11868624	7429502	2007-10-08	2008-09-30	Granted	United States of America	Integrated Circuit Device Incorporating Metallurgical Bond To Enhance Thermal Conduction To A Heat Sink
11235920	7327029	2005-09-27	2008-02-05	Granted	United States of America	Integrated Circuit Device Incorporating Metallurgical Bond To Enhance Thermal Conduction To A Heat Sink
11448560	7301231	2006-06-07	2007-11-27	Granted	United States of America	Reinforced Bond Pad For A Semiconductor Device
10955913	7115985	2004-09-30	2006-10-03	Granted	United States of America	Reinforced Bond Pad For A Semiconductor Device
11379256	8601683	2006-04-19	2013-12-10	Granted	United States of America	Method for Electrical Interconnection Between Printed Wiring Board Layers Using Through Holes with Solid Core Conductive Material
10755616		2004-01-12		Abandoned	United States of America	A Printed Wiring Board Including A Solid Core Conductive Material Located Therein

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11385245	7443042	2006-03-21	2008-10-28	Granted	United States of America	Methods And Apparatus For Wire Bonding With Wire Length Adjustment In An Integrated Circuit
10787010	7086148	2004-02-25	2006-08-08	Granted	United States of America	Methods And Apparatus For Wire Bonding With Wire Length Adjustment In An Integrated Circuit
12171903	7637414	2008-07-11	2009-12-29	Granted	United States of America	Methods And Apparatus For Wire Bonding With Wire Length Adjustment In An Integrated Circuit
09197074	6342442	1998-11-20	2002-01-29	Granted	United States of America	Kinetically Controlled Solder Bonding
10021174	7009299	2001-10-29	2006-03-07	Granted	United States of America	Kinetically Controlled Solder Bonding
10266267	6881613	2002-10-08	2005-04-19	Lapsed	United States of America	Electronic Component Package
11080859	7224076	2005-03-15	2007-05-29	Granted	United States of America	Electronic Component Package
10173182	6830999	2002-06-17	2004-12-14	Expired	United States of America	Method Of Fabricating Flip Chip Semiconductor Device Utilizing Polymer Layer For Reducing Thermal Expansion Coefficient Differential
09609582	6441473	2000-06-30	2002-08-27	Expired	United States of America	Flip Chip Semiconductor Device
08938619	5925827	1997-09-25	1999-07-20	Expired	United States of America	System And Method For Empirically Determining Shrinkage Stresses In A Molded Package And Power Module Employing The Same
09127707	5939641	1998-07-31	1999-08-17	Expired	United States of America	System And Method For Empirically Determining Shrinkage Stresses In A Molded Package And Power Module Employing The Same
11385086	7705473	2006-03-21	2010-04-27	Granted	United States of America	Methods And Apparatus For Determining Pad Height For A Wire-Bonding Operation In An Integrated Circuit
10673703	7056819	2003-09-29	2006-06-06	Granted	United States of America	Methods And Apparatus For Determining Pad Height For A Wire\(miBonding Operation In An Integrated Circuit
11530550	7271485	2006-09-11	2007-09-18	Granted	United States of America	Systems And Methods For Distributing I\(slO In A Semiconductor Device
11684674	7709861	2007-03-12	2010-05-04	Granted	United States of America	Systems And Methods For Supporting a Subset of Multiple Interface Types In A Semiconductor Device
09022733	5965903	1998-02-12	1999-10-12	Expired	United States of America	A Device And Method Of Manufacture For An Integrated Circuit Having A BIST Circuit And Bond Pads Incorporated Therein
09288746	6136620	1999-04-08	2000-10-24	Expired	United States of America	A Device And Method Of Manufacture For An Integrated Circuit Having A BIST And Bond Pads Incorporated Therein