

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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MIPOX CORPORATION,  
Petitioner,

v.

INTERNATIONAL TEST SOLUTIONS, INC.,  
Patent Owner.

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Case IPR2017-00869  
Patent 8,801,869 B2

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Before JO-ANNE M. KOKOSKI, JEFFREY W. ABRAHAM, and  
JOHN F. HORVATH, *Administrative Patent Judges*.

KOKOSKI, *Administrative Patent Judge*.

DECISION  
Institution of *Inter Partes* Review  
37 C.F.R. § 42.108

## I. INTRODUCTION

Mipox Corporation (“Petitioner”) filed a Petition (“Pet.”) to institute an *inter partes* review of claims 1–8 of U.S. Patent No. 8,801,869 B2 (“the ’869 patent,” Ex. 1001). Paper 1. International Test Solutions, Inc. (“Patent Owner”) filed a Preliminary Response (“Prelim. Resp.”). Paper 7. We have jurisdiction under 35 U.S.C. § 314.

Upon consideration of the Petition and Preliminary Response, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing with respect to the unpatentability of claims 1–4 and 6 of the ’869 patent. Accordingly, we institute an *inter partes* review of those claims.

### A. *Related Proceedings*

The parties indicate that the ’869 patent is asserted by Patent Owner against Petitioner in *International Test Solutions, Inc. v. Mipox Int’l Corp.*, Case 3:16-cv-00791-RS (N.D. Cal.). Pet. 1; Paper 5, 2. Patent Owner also identifies two co-pending petitions for *inter partes* review of related patents: IPR2017-00937 (challenging U.S. Patent No. 7,202,683) and IPR2017-00938 (challenging U.S. Patent No. 6,777,966). Paper 5, 2; *see also* Pet. 1–2 (“Petitioner anticipates filing separate petitions for *inter partes* review of the ’966 Patent and the ’683 Patent.”).

### B. *The ’869 Patent*

The ’869 patent, titled “Apparatuses, Device, and Methods for Cleaning Tester Interface Contact Elements and Support Hardware,” relates to a cleaning device for cleaning pin contact elements and support hardware in a semiconductor testing apparatus, wherein the cleaning layer has “a predetermined configuration appropriate for the particular pin contact elements.” Ex. 1001, Abs. According to the ’869 patent, “[t]he disclosure is

particularly applicable to a cleaning pad for electrical test probes that have contact elements with a predetermined geometry,” such as crown tipped spring probes and spear tipped probes, “and support structures used for tester interface devices utilized for wafer level and package level testing.” *Id.* at 6:23–28.

The cleaning material “may be constructed from one or more layers, each with predetermined mechanical, material, and dimensional characteristics,” such as abrasiveness, density, elasticity, tackiness, and thickness, “so that when the pin elements contact the pad surface, the contact area and the surrounding support hardware are cleaned such that debris and contaminants are removed.” *Id.* at 6:51–57. The properties of the top layer of the cleaning material “allow the probe tips to deform and penetrate the elastomeric material to remove the debris on the contact area without damage to the geometry of the contact elements, while retaining the integrity of the elastomeric matrix.” *Id.* at 7:5–11. The cleaning material also “may have a multi-layered structure in which the surface is populated with a plurality of uniformly shaped and regularly spaced, geometric micro-features, such as micro-columns, micro-pyramids, or other such structural micro-features” to improve debris removal and collection efficiency. *Id.* at 7:19–26.

Figure 4A of the ’869 patent is reproduced below.

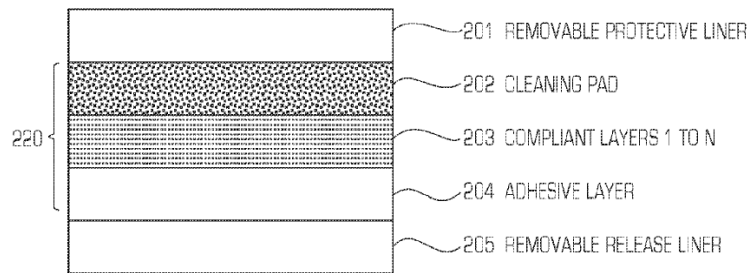


FIG. 4A

Figure 4A depicts a sectional view of a cleaning medium with one or more compliant layers below a cleaning pad layer. *Id.* at 5:38–40. Cleaning medium 220 comprises cleaning pad layer 202, having predetermined properties (such as hardness) that contribute to cleaning the contact elements that contact cleaning pad layer 202, and one or more intermediate compliant layers 203 attached to and below cleaning pad layer 202. *Id.* at 8:63–9:5. Removable protective layer 201 protects the working surface of cleaning pad layer 202 from debris and/or contaminants until the cleaning device is ready for use. *Id.* at 9:35–38. To install the cleaning device onto a substrate material, second release liner layer 205 is removed to expose adhesive layer 204, and adhesive layer 204 is then placed against a substrate to adhere cleaning device 220 to the substrate. *Id.* at 9:48–54.

The '869 patent explains that “[t]he combinations of layers produces material properties unavailable from the individual constituent materials, while the wide variety of matrix, abrasive particles, and geometries allows for a product or structure that has to choose an optimum combination to maximize cleaning performance.” *Id.* at 9:5–10. The '869 patent further explains that “adding compliant or microporous foam underlayers beneath a rigid cleaning layer” reduces the overall abrasive wear characteristics of the cleaning material and/or enhances the tip shaping performance such that the

overall service life of the probe element is extended without compromising the shape or function of the contact geometry. *Id.* at 9:10–15.

According to the '869 patent, “the maximum cleaning efficiency of the cleaning material can be improved using a plurality of uniformly shaped and regularly spaced, geometric micro-features.” *Id.* at 11:25–28. Figure 5A of the '869 patent is reproduced below.

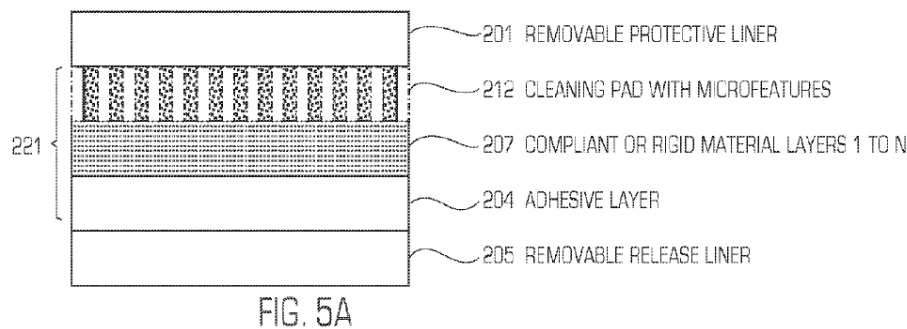


Figure 5A depicts a sectional view of a cleaning material with micro-columns. *Id.* at 5:51–54. Cleaning medium 221 includes micro-columns 212 constructed from a single layer “across a combination of intermediate compliant or rigid layers 207 with . . . predetermined properties.” *Id.* at 11:30–33. “The size and geometry of the micro-features may vary according [to] the configuration and material of the contact elements to achieve a pad that will remove the debris but not damage the probe elements.” *Id.* at 11:47–50. The micro-features “may have abrasive particles applied to the top surface, along the length of the micro-feature, within the body of the micro-feature, or at the base of the micro-feature.” *Id.* at 12:58–61.

Figure 8A of the '869 patent is reproduced below.

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