

EXHIBIT 10

(12) **United States Patent**
Nakanishi et al.

(10) **Patent No.:** **US 8,804,079 B2**
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- (54) **LIQUID CRYSTAL DISPLAY DEVICE**
 (71) Applicant: **Sharp Kabushiki Kaisha**, Osaka (JP)
 (72) Inventors: **Yohei Nakanishi**, Osaka (JP); **Kunihiro Tashiro**, Osaka (JP); **Katsufumi Ohmuro**, Osaka (JP); **Kazutaka Hanaoka**, Osaka (JP); **Jin Hirose**, Osaka (JP); **Norio Sugiura**, Kawasaki (JP); **Kengo Kanii**, Himeji (JP); **Shota Makimoto**, Kawasaki (JP); **Naoto Kondo**, Osaka (JP); **Isao Tsushima**, Osaka (JP); **Tomonori Tanose**, Osaka (JP); **Takashi Takagi**, Osaka (JP); **Tetsuya Fujikawa**, Osaka (JP)
 (73) Assignee: **Sharp Kabushiki Kaisha**, Osaka (JP)
 (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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- Related U.S. Application Data**
 (62) Division of application No. 13/007,894, filed on Jan. 17, 2011, now Pat. No. 8,432,518, which is a division of application No. 12/785,215, filed on May 21, 2010, now Pat. No. 7,920,239, which is a division of application No. 12/723,977, filed on Mar. 15, 2010, now Pat. No. 8,325,306, which is a division of application No. 11/104,309, filed on Apr. 12, 2005, now Pat. No. 7,710,523.

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- (51) **Int. Cl.**
G02F 1/1337 (2006.01)
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 (52) **U.S. Cl.**
 USPC **349/129**; 349/139; 349/143

- (58) **Field of Classification Search**
 USPC 349/129
 See application file for complete search history.

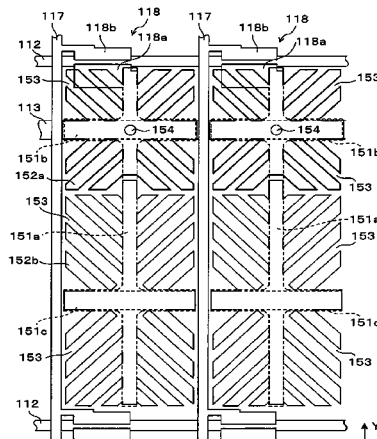
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Primary Examiner — Wen-Ying P Chen
 (74) *Attorney, Agent, or Firm* — Greer Burns & Crain, Ltd.

- (57) **ABSTRACT**
 A liquid crystal display device including a first and second substrates and a liquid crystal layer. The first substrate includes a plurality of picture elements, and at least one of the plurality of picture elements includes: a switching element; a plurality of gate bus lines extending in a first direction and electrically connected to the switching element; a plurality of data bus lines extending in a second direction and electrically connected to the switching element; a first sub picture element electrode and a second sub picture element electrode disposed adjacent to the first sub picture element electrode with a gap therebetween, and a control electrode overlapping both the first and second sub picture element electrodes. The control electrode extends in the second direction. Each of the first and second sub picture element electrodes includes a cross-shaped connecting electrode part and microelectrode parts extending from the connecting electrode part.

19 Claims, 33 Drawing Sheets



US 8,804,079 B2

Page 2

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FIG. 1
(PRIOR ART)

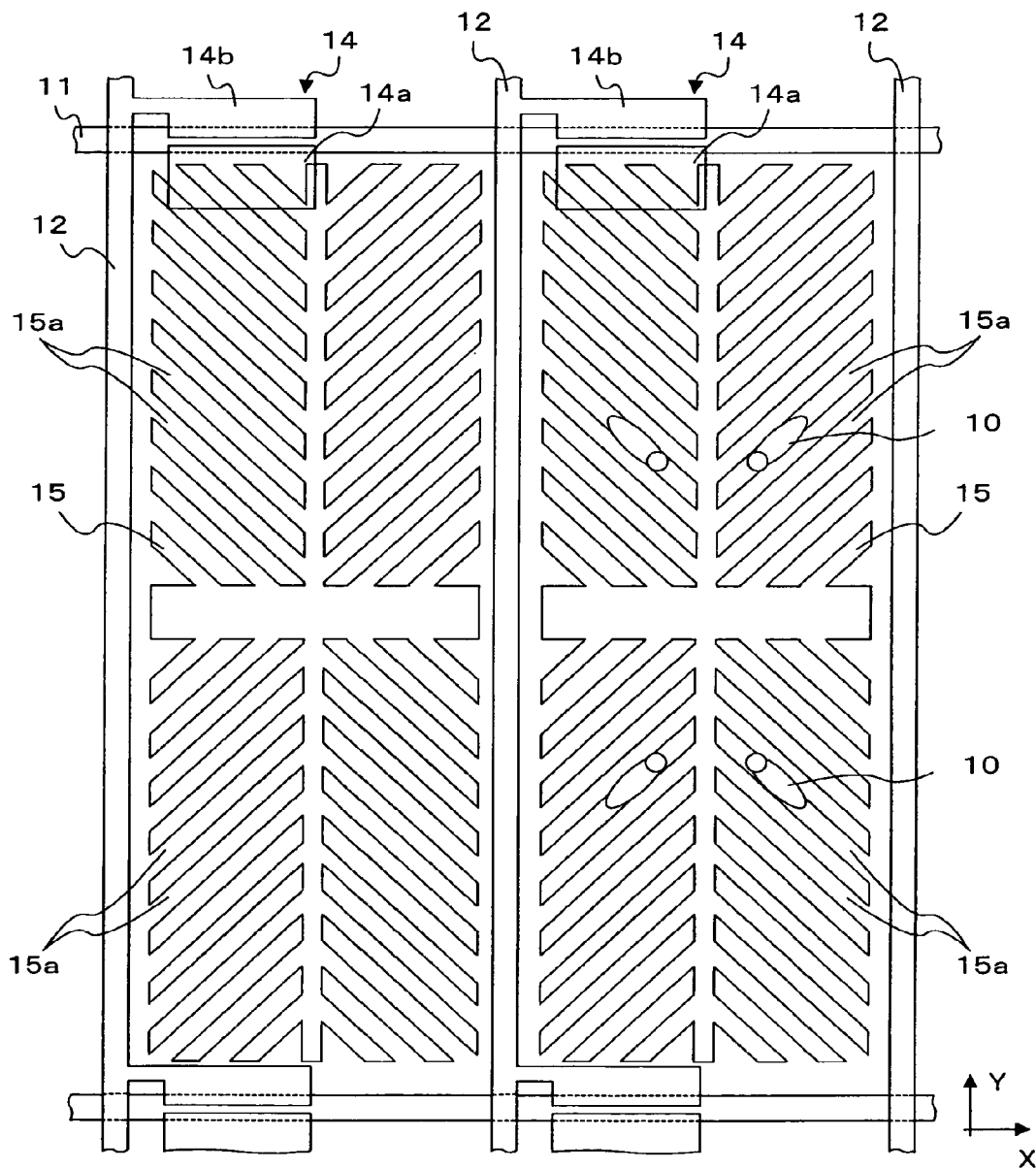
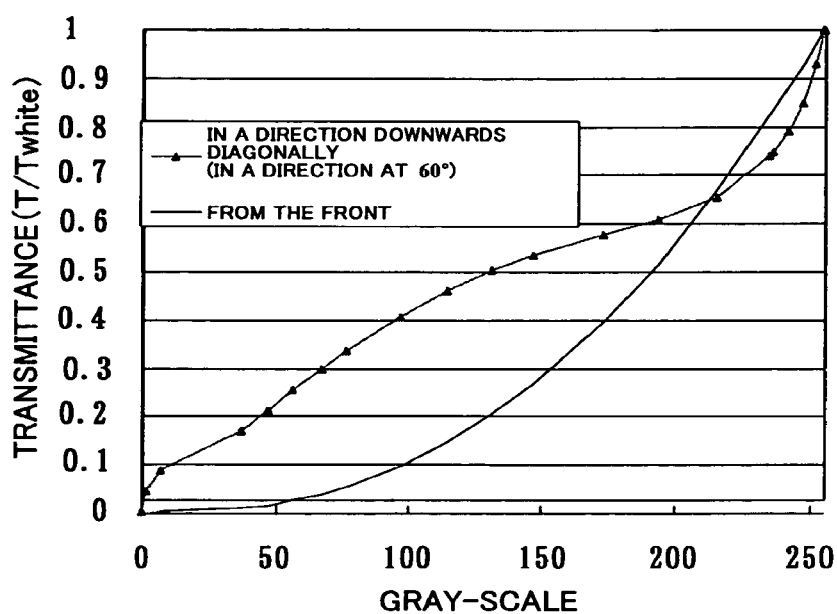


FIG. 2
(PRIOR ART)



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