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(54) Title: PORTABLE ELECTRONIC DEVICE HAVING AN ELECTRO WETTING DISPLAY ILLUMINATED BY QUANTUM DOTS

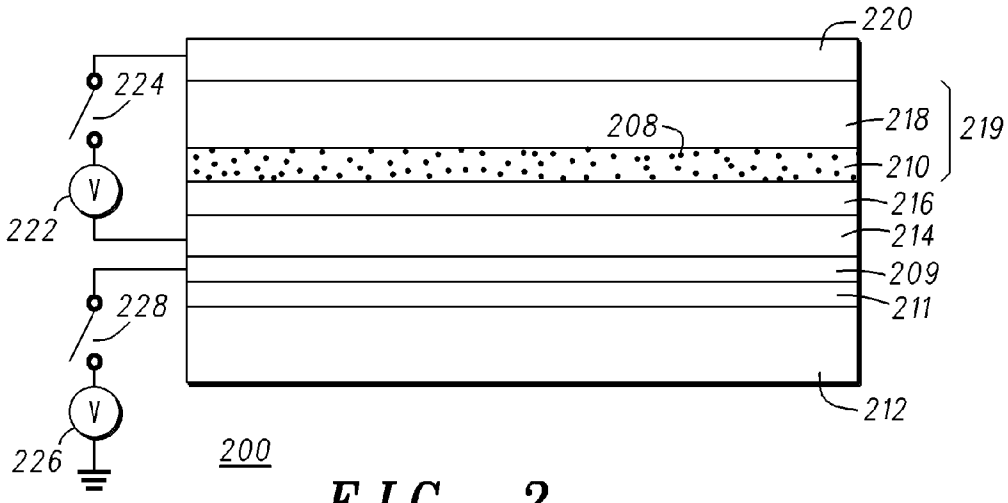


FIG. 2

(57) Abstract: A portable electronic device (510) includes an electrowetting display (200, 202, 204, 206, 300, 512) having a plurality of transparent layers defining a cavity (219). A combination of a first fluid (218, 236) and a second fluid (210, 234, 244, 254) are positioned in the cavity. First circuitry (224) is coupled to a voltage source (222) for selectively repositioning the second fluid (210, 234, 244, 254) in relation to the first fluid (218, 236). A plurality of quantum dots (208, 360) is positioned within the second fluid (210, 234, 244, 254), and a light source (209, 309) is disposed contiguous to the plurality of layers. Second circuitry (228) is coupled to a voltage source (226) for selectively causing the light source (209, 309) to emit photons to strike the plurality of quantum dots (208 360). Similar stacks of layers (204, 206) may be added to provide a color display.

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 8 : G02B, G02F, H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean Utility models and applications for Utility models since 1975
Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKIPASS (KIPO internal) & keywords: "cavity", "fluid", "quantum dot", "display", "electrowetting"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2006-000945 A1 (KONINKLIJKE PHILIPS ELECTRONICS N.V.) 05 JANUARY 2006 See abstract; Figs.1, 2 and its corresponding explanations.	1-23
A	KR 10-0646810 B1 (IMAGELAB CO.LTD.) 09 NOVEMBER 2006 See claims 1, 2; Fig.2 and its corresponding explanation.	1-23
A	KR 10-2002-0050014 A (KWANGJU INSTITUTE OF SCIENCE AND TECHNOLOGY) 26 JUNE 2002 See whole document.	1-23
A	KR 10-2006-0100151 A (INDUSTRY-UNIVERSITY COOPERATION FOUNDATION HANYANG UNIV.) 20 SEPTEMBER 2006 See whole document.	1-23
A	JP 1999-354842 A (MITSUBISHI CABLE IND LTD et al.) 24 DECEMBER 1999 See whole document.	1-23

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:
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Date of the actual completion of the international search	Date of mailing of the international search report
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Information on patent family members

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