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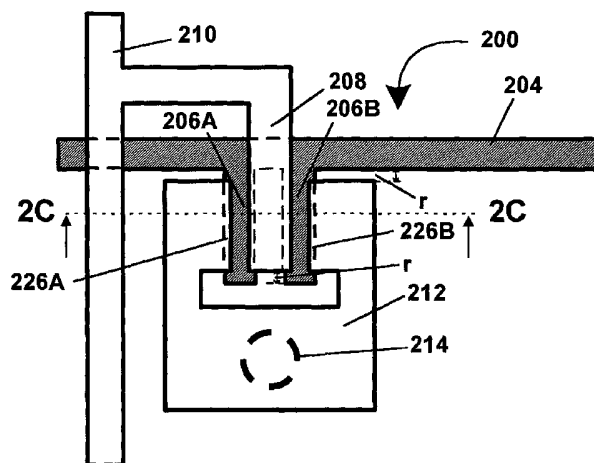
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[Continued on next page]

(54) Title: ELECTRONIC DISPLAYS



(57) Abstract: A thin-film transistor (200) includes a gate electrode (206A, 206B) having a first gate electrode edge and a second gate electrode edge opposite the first gate electrode edge. The TFT also includes a drain electrode (212) having a first drain electrode edge that overlaps the first gate electrode edge, and a second drain electrode edge that overlaps the second gate electrode edge. A method for fabricating a diode array for use in a display includes deposition of a conductive layer adjacent to a substrate, deposition of a doped semiconductor layer adjacent to the substrate, and deposition of an undoped semiconductor layer adjacent to the substrate. A display pixel unit provides reduced capacitive coupling between a pixel electrode and a source line. The unit includes a transistor, the pixel electrode, and the source line. The source line includes an extension that provides a source for the transistor. A patterned conductive portion is disposed adjacent to the source line. Another display pixel unit provides reduced pixel electrode voltage shifts. The unit includes a transistor, a pixel electrode, a source line and a balance line. The invention also provides a driver for driving a display provided with such a balance line.

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**(88) Date of publication of the international search report:**  
25 March 2004

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/13399

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC 7 H01L29/423 H01L29/417

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 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	US 5 614 427 A (YANG MOHSHI ET AL) 25 March 1997 (1997-03-25) figure 7	1,2,9,10  12-16 3-8,11
Y	----- EP 0 981 065 A (MASSACHUSETTS INST TECHNOLOGY) 23 February 2000 (2000-02-23) page 12, line 12 - line 17; figure 16	12-16
A	----- US 5 672 524 A (LIU YOWJUANG W ET AL) 30 September 1997 (1997-09-30) figures 20,21,23	1-6
A	----- US 5 847 413 A (OGATA YASUSHI ET AL) 8 December 1998 (1998-12-08) figures 5,6,10,11  ----- -/--	1-6

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance  
 "E" earlier document but published on or after the international filing date  
 "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  
 "O" document referring to an oral disclosure, use, exhibition or other means  
 "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  
 "&" document member of the same patent family

Date of the actual completion of the international search

22 September 2003

Date of mailing of the international search report

16. 01. 2004

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# INTERNATIONAL SEARCH REPORT

International Application No  
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 41 08 818 A (SIEMENS AG) 24 September 1992 (1992-09-24) figures 3,4 -----	1

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 03/13399

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-16

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-16

Transistor with with first and second gate edges and first and second drain edges

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2. claims: 17,18

Method of fabricating diodes

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3. claims: 19,20

Backplane with conductive portion between source and pixel or with a balance line.

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4. claims: 21,22

Driver for driving electro-optic display with first and second inputs a DA converter and first and second outputs.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No <b>PCT/US 03/13399</b>
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