

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
6 February 2003 (06.02.2003)

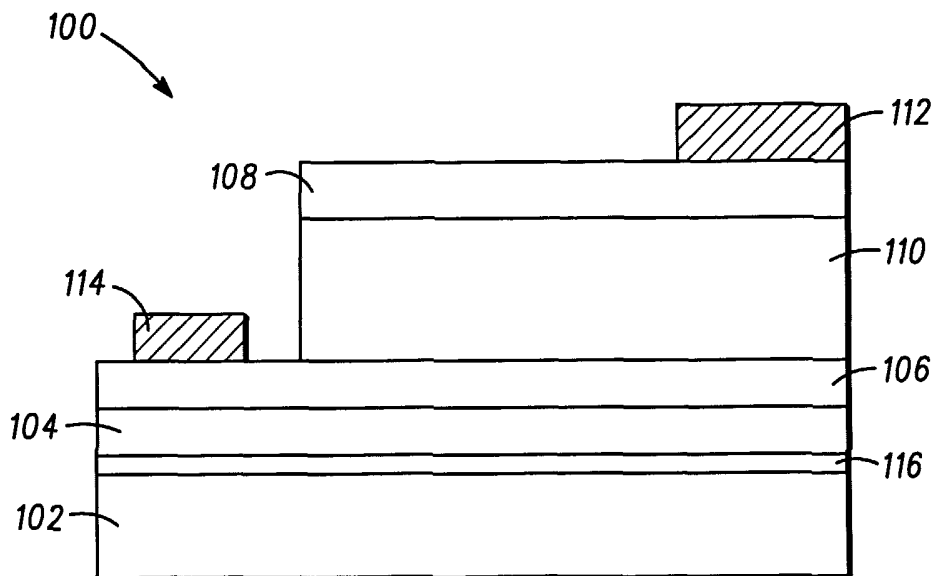
PCT

(10) International Publication Number  
**WO 03/010834 A3**

- (51) International Patent Classification<sup>7</sup>: **H01L 41/08**, 41/22, 27/115
- (74) Agent: **KOCH, William, E.**; 3102 North 56th Street, AZ11/56-238, Phoenix, AZ 85018-6606 (US).
- (21) International Application Number: PCT/US02/20214
- (22) International Filing Date: 26 June 2002 (26.06.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
09/912,994 25 July 2001 (25.07.2001) US
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- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
- with international search report
  - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: MICROELECTRONIC PIEZOELECTRIC STRUCTURE



(57) Abstract: A high quality epitaxial layer of monocrystalline  $\text{Pb}(\text{Zr,Ti})\text{O}_3$  (110) can be grown overlying large silicon wafers by first growing an strontium titanate layer (104) on a silicon wafer (102). The strontium titanate layer is a monocrystalline layer spaced apart from the silicon wafer by an amorphous interface layer (116) of silicon oxide. Monocrystalline conductive layers of  $(\text{La,Sr})\text{CoO}_3$  (106, 108) are formed adjacent the active layer (110) thus constituting piezoelectric devices or ferroelectric memory elements.



**(88) Date of publication of the international search report:**  
24 July 2003

*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.*

## INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US 02/20214

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 H01L41/08 H01L41/22 H01L27/115

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, WPI Data, PAJ, INSPEC, COMPENDEX

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages                                                                                                                                                                                                                                                                                                                                                            | Relevant to claim No. |
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|            | -----<br>-/--                                                                                                                                                                                                                                                                                                                                                                                                                                 |                       |



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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Date of the actual completion of the international search

20 May 2003

Date of mailing of the international search report

02/06/2003

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## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 02/20214

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages                                                                                                                                                                                                      | Relevant to claim No. |
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| P,X        | WANG Y ET AL: "Epitaxial ferroelectric Pb(Zr, Ti)O <sub>3</sub> thin films on Si using SrTiO <sub>3</sub> template layers"<br>APPLIED PHYSICS LETTERS,<br>vol. 80, no. 1,<br>7 January 2002 (2002-01-07), pages 97-99,<br>XP001092644<br>ISSN: 0003-6951<br>the whole document<br>----- | 1,5,6,10              |

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Information on patent family members

International Application No

PCT/US 02/20214

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