20000419 6-2

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : H01L 51/20, 27/146

A1

(11) International Publication Number: WO 99/39394

(43) International Publication Date: 5 August 1999 (05.08.99)

(21) International Application Number: PCT/US99/02239

(22) International Filing Date: 2 February 1999 (02.02.99)

(30) Priority Data:
(1) 60/073,411 2 February 1998 (02.02.98) US

(1)

(71) Applicant: UNIAX CORPORATION [US/US]; 6780 Cortona Drive, Santa Barbara, CA 93117 (US).

(72) Inventors: YU, Gang; 667 Camino Campana, Santa Barbara, CA 93111 (US). CAO, Yong; 436 Pomona Court, Goleta, CA 93117 (US).

(74) Agent: BENZ, William, H.; Burns, Doane, Swecker & Mathis, L.L.P., P.O. Box 1404, Alexandria, VA 22313-1404 (US).

(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, 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, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, 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), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, 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 the receipt of amendments.

1 PD, 1 appl n.

(54) Title: X-Y ADDRESSABLE ELECTRIC MICROSWITCH ARRAYS AND SENSOR MATRICES EMPLOYING THEM

(57) Abstract

The present invention relates generally to fabricating two-terminal electric microswitches comprising thin semiconductor films and using these microswitches to construct column-row (x-y) addressable microswitch matrices. These microswitches are two terminal devices through which electric current and electric potential (or their derivates or integrals) can be switched on and off by the magnitude or the polarity of the external bias. The microswitches are made from semiconducting thin films in an electrode/semiconductor/electrode, thin film configuration. Column-row addressable electric microswitch matrices can be made in large areas, with high pixel density. Such matrices can be integrated with a sensor layer with electronic properties which vary in response to external physical conditions (such as photon radiation, temperature, pressure, magnetic field and so on), thereby forming a variety of detector matrices.



