Title: CONDUCTIVE-POLYMER ELECTRONIC SWITCH

Abstract: A switch, used as an electronic-memory element, comprising a conductive organic polymer layer (819) sandwiched between, and in contact with, two metallic conductive elements (802-806 and 810-813). In an initial post-fabrication state, the organic polymer layer is relatively highly conductive, the post-fabrication constituting a first stable state of the memory element that can serve to represent a binary bit "1" or "0," depending on which of two possible encoding conventions is employed. A relatively high voltage pulse can be passed between the two metal conductive elements, resulting in a market decrease in the current-carrying capacity of the organic polymer layer sandwiched between the two conductive elements. This change in conductivity of the organic polymer layer is generally irreversible, and constitutes a second stable state of the memory element that may be used to encode a binary bit "0" or "1." Organic-polymer-based memory elements, modified to include an additional diode-acting layer (818), may be fabricated in dense, two-dimensional arrays.
Published:
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INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : B05D 1/40, 3/02, 5/12; B32B 15/08; H01L 51/00, 51/20, 51/30
US CL : 257/40; 428/411.1, 500; 427/101, 103, 388.1, 401
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)
U.S. : 257/40; 428/411.1, 500; 427/101, 103, 388.1, 401

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

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<tbody>
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<td>X,P</td>
<td>US 6,528,815 B1 (BROWN et al.) 04 March 2003 (04.03.2003), column 2, lines 1-56 and Figures 1-5.</td>
<td>1-7, 11, 12</td>
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<td>Y,P</td>
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<td>8-10, 13-17</td>
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<td>A</td>
<td>US 6,236,587 B1 (GUDESEN et al.) 22 May 2001 (22.05.2001), column 1, lines 5-38 and column 6, line 63-column 7, line 18.</td>
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