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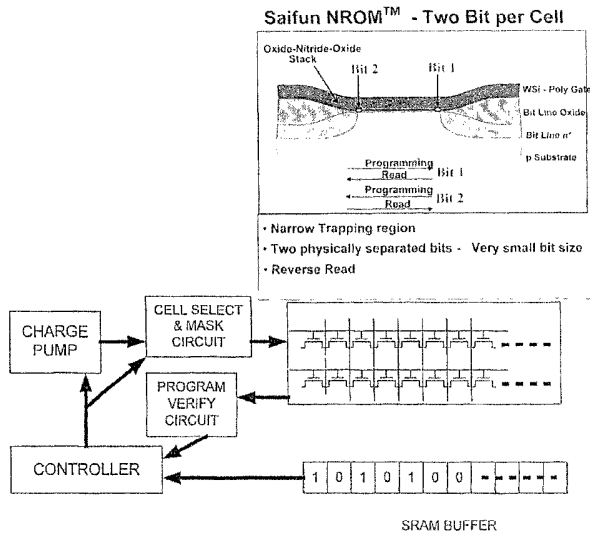
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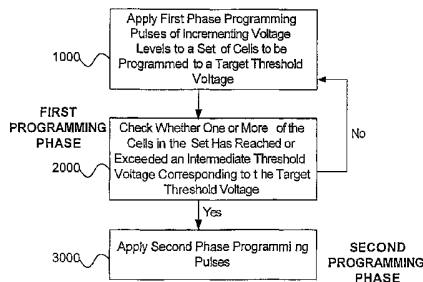
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[Continued on next page]

(54) Title: METHOD, SYSTEM AND CIRCUIT FOR PROGRAMMING A NON-VOLATILE MEMORY ARRAY



(57) Abstract: The present invention is a multi-phase method, circuit and system for programming non-volatile memory ("NVM") cells in an NVM array (100). The present invention may include a controller (110) to determine when, during a first programming phase (2000), one or more NVM cells of a first set of cells reaches or exceeds a first intermediate voltage, and to cause a charge pump circuit (130) to apply to a terminal of the one or more cells (100) in the first set second phase programming (3000) pulses to induce relatively greater threshold voltage changes in cells having less stored charge than in cells having relatively more stored charge.



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A. CLASSIFICATION OF SUBJECT MATTER

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 US CL : 365/185.24

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. : 365/185.24,189.19,185.33,185.25,185.28

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 practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y .	US 5,608,679 (Mi et al.) 4 March 1997 (04.03.1997), Figs. 7 and 2, Column 9 lines 1-12 and 36-67,	1 - 6, 10 - 12, 14 - 20, 24 - 26, and 28 - 33
A	US PUB 2004/0153621 A1 (Polansky et al.) 5 August 2004 (05.08.2004), [0012], [0015], and [0052]	1, 3, 11, 14, 15, 17, 20, 23, 26, 29, 32, and
A	US PUB 2002/0191444 A1 (Gregori et al.) 19 December 2002 (19.12.2002), abstract lines 3-9	1, 15, 29, 32, and 33

Further documents are listed in the continuation of Box C.

See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
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