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[Continued on next page]

(54) Title: ARRAYED NEUTRON DETECTOR WITH MULTI SHIELDING ALLOWING FOR DISCRIMINATION BETWEEN RADIATION TYPES

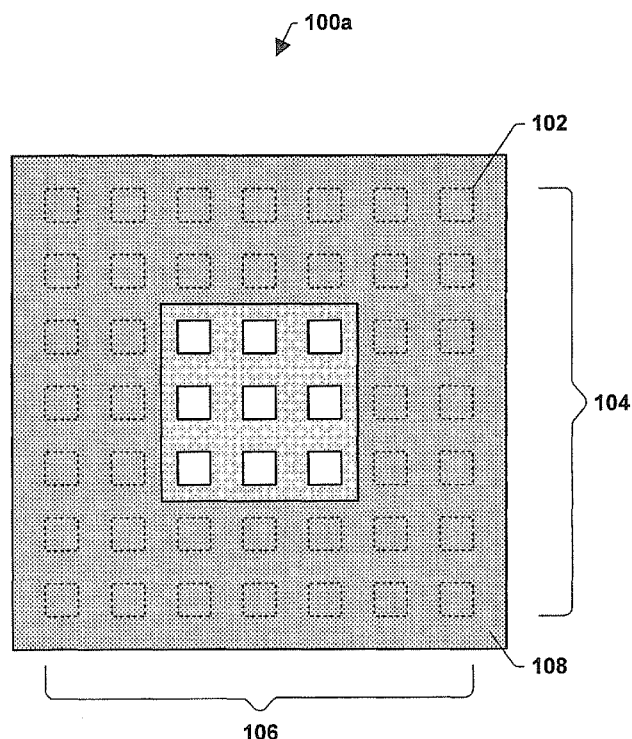


Figure 1a

(57) Abstract: Neutron detectors including one or more gamma shields over memory dies and methods of making the neutron detectors are provided. The neutron detectors can contain two or more memory dies, neutron-reactant layers over the two or more memory dies, and one or more gamma shields over at least a portion of or an entire of the two or more memory dies. By containing the gamma shield over the at least a portion of or an entire of the two or more memory dies, the neutron detector can detect and discriminate neutrons in the presence of gamma rays.



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A. CLASSIFICATION OF SUBJECT MATTER

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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)
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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, INSPEC, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 075 261 A (HOSSAIN TIM Z [US] ET AL) 13 June 2000 (2000-06-13) cited in the application column 2, line 47 - line 66 column 3, line 8 - line 41 column 4, line 49 - column 5, line 25 column 5, line 65 - column 6, line 5 figures	1-10
Y	EP 1 081 509 A (SAINT GOBAIN [US] SAINT GOBAIN NORTON IND CERAMI [US]) 7 March 2001 (2001-03-07) column 4, paragraph 16; figures	1-10
A	US 2004/119591 A1 (PEETERS JOHN [US]) 24 June 2004 (2004-06-24) page 5, paragraph 71	5,8,10
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☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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- *G* document member of the same patent family

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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	US 2004/227094 A1 (TOMPA GARY S [US] ET AL) 18 November 2004 (2004-11-18) page 2, paragraphs 26,31 page 3, paragraphs 34,37,39 page 4, paragraph 52 page 5, paragraph 56 - paragraph 58; figures -----	1,6,9

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6075261	A	13-06-2000	NONE	
EP 1081509	A	07-03-2001	CA 2312593 A1 NO 20004178 A US 6373066 B1	20-02-2001 21-02-2001 16-04-2002
US 2004119591	A1	24-06-2004	AU 2003294603 A1 EP 1584076 A2 JP 2006515694 T KR 20050099963 A WO 2004061412 A2 US 2008169921 A1	29-07-2004 12-10-2005 01-06-2006 17-10-2005 22-07-2004 17-07-2008
US 2004227094	A1	18-11-2004	NONE	