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(54) Title: PN JUNCTION CHEMICAL SENSOR

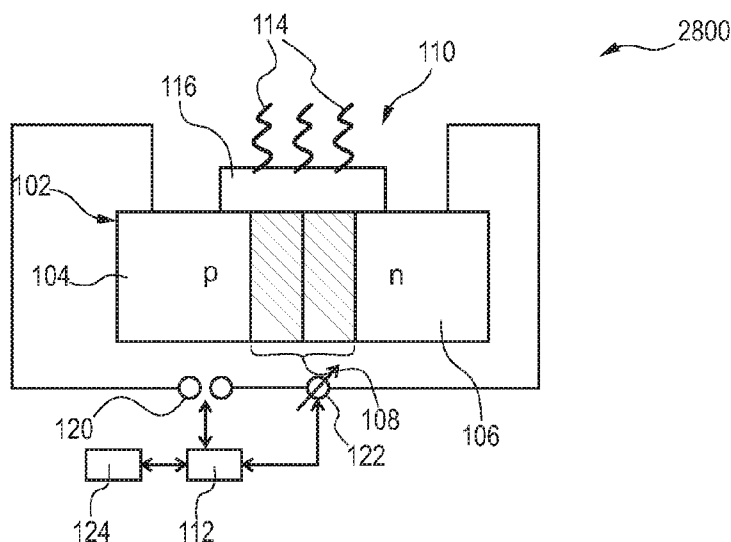


Fig. 28

(57) Abstract: A sensor device (100, 2800) for detecting particles, the sensor device (100, 2800) comprising a substrate (102), a first doped region (104) formed in the substrate (102) by a first dopant of a first type of conductivity, a second doped region (106, 150) formed in the substrate (102) by a second dopant of a second type of conductivity which differs from the first type of conductivity, a depletion region (108) at a junction between the first doped region (104) and the second doped region (106, 150), a sensor active region (110) adapted to influence a property of the depletion region (108) in the presence of the particles, and a detection unit (112) adapted to detect the particles based on an electric measurement performed upon application of a predetermined reference voltage between the first doped region (104) and the second doped region (106, 150), the electric measurement being indicative of the presence of the particles in the sensor active region (110).

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G01N 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)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/118903 A1 (CAHEN DAVID [IL] ET AL) 8 June 2006 (2006-06-08) paragraphs [0058], [0072] - [0083]; figure 1	1-3,5, 7-11, 15-22
X	US 2003/193073 A1 (TULLER HARRY L [US] ET AL) 16 October 2003 (2003-10-16)	1,2,4,5, 8,11-17, 19-22
Y	paragraphs [0021] - [0025]; figures ----- -/--	18

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See patent family annex.

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T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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Date of the actual completion of the international search

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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.
Y	NAKASHIMA K ET AL: "A NEW TYPE OF SIC GAS SENSOR WITH A PN-JUNCTION STRUCTURE" MATERIALS SCIENCE FORUM, AEDERMANNSDORF, CH, vol. 383-393, 1 January 2002 (2002-01-01), pages 1427-1430, XP008039385 ISSN: 0255-5476 figure 1	18
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X	----- US 4 103 227 A (ZEMEL JAY N) 25 July 1978 (1978-07-25) abstract; figure 2	1,20
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A	----- US 5 691 558 A (DAVIES NEIL A [DE]) 25 November 1997 (1997-11-25) abstract; figures	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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