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(54) **Title:** NO_x SENSOR WITH IMPROVED SELECTIVITY AND SENSITIVITY

(57) **Abstract:** A NO_x sensor and a method of manufacturing a NO_x sensor array (170). The NO_x sensor includes a base substrate (182), a plurality of potentiometric sensors (162), and a plurality of connectors (184). The plurality of potentiometric sensors (162) are coupled to the base substrate (182). Each potentiometric sensor (162) generates a potential difference in response to the presence OfNO_x in a gas specimen. The plurality of connectors (184) are coupled to the plurality of potentiometric sensors (162). The plurality of connectors (184) connect the plurality of potentiometric sensors (162) to combine the potential differences of the plurality of potentiometric sensors (162) to produce a combined potential difference indicative of a level OfNO_x within an ambient gas specimen. Use of a filter and appropriate temperature control of filter and sensor minimizes interference from contaminants.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 08/02079

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - G01F 1/64 (2008.04)
USPC - 205/781; 204/424
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)
USPC: 205/781 , 204/424

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 205/$, 204/$
Google (Patents, Scholar, and Web)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PUBWEST (PGPB.USPT.USOC.EPAB.JPAB); Google (Patents, Scholar, and Web); WIPO
Search Terms Used: nitrogen oxide, sensor, potentiometric, potential, tungsten, zirconia, yttria, substrate

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003/0121780 A1 (DUTTA et al) 03 July 2003 (03 07 2003), Abstract, para [0002], [0016], [0017], [0039]-[0043], [0045], [0047], [0060], [0070], Fig 8B	1-18
Y	US 6,598,596 B2 (WACHSMAN et al) 29 July 2003 (29 07 2003), col 2, ln 5-14, col 3, ln 20-27; col 4, ln 1-12; col 4, ln 18-23; col 5, ln 50-67; col 8, ln 8-10; col 8, ln 50-53, col. 9, ln 39 - col 10, ln 23; col. 10, ln 34-39; col 11, ln 41-55; col 12, ln 1-32; col. 13, ln 14-16, col 14, ln 56-65; col 15, ln 3-5; Fig 15	1-26
Y	US 2002/0046947 A1 (LAWLESS) 25 April 2002 (25.04.2002), para [0067]	19-26

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Name and mailing address of the ISA/US Mail Stop PCT, Attn- ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer. Lee W Young PCT Hetpdesk 571-272-4300 PCT OSP 571-272-7774