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9960968-0
IPDS

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : G01N 27/12

A1

(11) International Publication Number: WO 98/07024

(43) International Publication Date: 19 February 1998 (19.02.98)

(21) International Application Number: PCT/US97/14070

(22) International Filing Date: 11 August 1997 (11.08.97)

(30) Priority Data:
08/696,128 14 August 1996 (14.08.96) US

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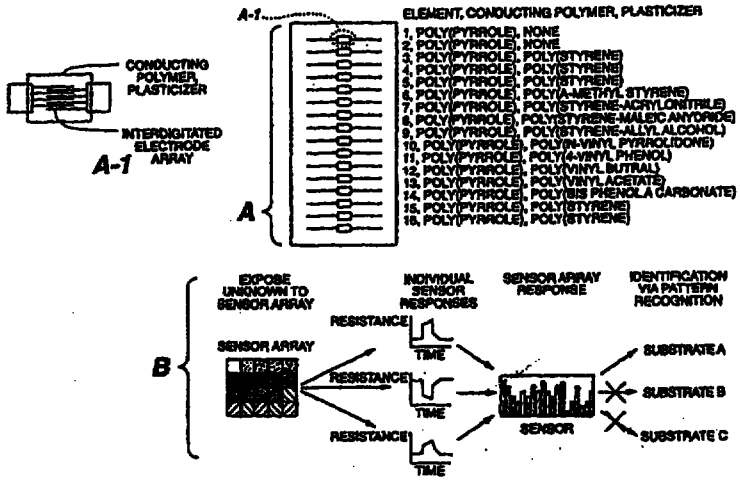
(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published

With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: SENSORS FOR DETECTING ANALYTES IN FLUIDS



(57) Abstract

Chemical sensors for detecting analytes in fluids comprise first and second conductive elements (e.g., electrical leads) electrically coupled to and separated by a chemically sensitive resistor which provides an electrical path between the conductive elements. The resistor comprises a plurality of alternating nonconductive regions (comprising a nonconductive organic polymer) and conductive regions (comprising a conductive material) transverse to the electrical path. The resistor provides a difference in resistance between the conductive elements when contacted with a fluid comprising a chemical analyte at a first concentration, than when contacted with a fluid comprising the chemical analyte at a second different concentration. Arrays of such sensors are constructed with at least two sensors having different chemically sensitive resistors providing dissimilar such differences in resistance. Variability in chemical sensitivity from sensor to sensor is provided by qualitatively or quantitatively varying the composition of the conductive and/or nonconductive regions. An electronic nose for detecting an analyte in a fluid may be constructed by using such arrays in conjunction with an electrical measuring device electrically connected to the conductive elements of each sensor.