

Title (en)

A CHEMICAL SENSOR USING CHEMICALLY INDUCED ELECTRON-HOLE PRODUCTION AT A SCHOTTKY BARRIER

Title (de)

CHEMISCHER SNESOR BASIEREND AUF DER CHEMISCH INDUZIERTEN GENERIERUNG VON ELEKTRON-LOCHPAAREN IN EINEM SCHOTTKY-ÜBERGANG

Title (fr)

DETECTEUR CHIMIQUE UTILISANT UNE PRODUCTION DE TROUS D'ELECTRONS INDUITE CHIMIQUEMENT AU NIVEAU D'UNE BARRIERE DE SCHOTTKY

Publication

**EP 1254478 A1 20021106 (EN)**

Application

**EP 99973730 A 20000119**

Priority

US 9929363 W 20000119

Abstract (en)

[origin: WO0154171A1] Electron-hole production at a Schottky barrier has recently been observed experimentally as a result of chemical processes. This conversion of chemical energy to electronic energy may serve as a basic link between chemistry and electronics and offers the potential for generation of unique electronic signatures for chemical reactions and the creation of a new class of solide state chemical sensors. Detection of the following chemical species was established: hydrogen, deuterium, carbon monoxide, molecular oxygen. The detector (1b) consists of a Schottky diode between an Si layer and an ultrathin metal layer with zero force electrical contacts.

IPC 1-7

**H01L 21/00**; **G01N 27/00**

IPC 8 full level

**B01J 23/50** (2006.01); **C23C 14/16** (2006.01); **G01N 27/00** (2006.01); **G01N 27/414** (2006.01); **G01N 27/416** (2006.01); **H01L 29/47** (2006.01); **H01L 29/872** (2006.01)

CPC (source: EP)

**G01N 27/129** (2013.01); **H01L 2224/48463** (2013.01); **H01L 2224/4918** (2013.01)

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

**WO 0154171 A1 20010726**; AU 6333300 A 20010731; EP 1254478 A1 20021106; EP 1254478 A4 20041201; JP 2003520351 A 20030702

DOCDB simple family (application)

**US 9929363 W 20000119**; AU 6333300 A 20000119; EP 99973730 A 20000119; JP 2001553564 A 20000119