Title (en)

SENSING DEVICES USING CHEMICALLY-GATED SINGLE ELECTRON TRANSISTORS

Title (de)

SENSOR-ANORDNUNG MIT CHEMISCH GESTEUERTEM GATTER EINES EINELEKTRONTRANSISTORS

Title (fr)

DISPOSITIFS DE DETECTION UTILISANT DES TRANSISTORS A EFFET QUANTIQUE A DECLENCHEMENT CHIMIQUE

Publication

EP 1212795 A4 20060927 (EN)

Application

EP 00966700 A 20000818

Priority

- US 0022747 W 20000818
- US 37669599 A 19990818

Abstract (en)

[origin: WO0113432A1] A chemically-gated single-electron transistor (60) having a predetermined current-voltage characteristic and adapted for use as a chemical or biological sensor that is operable at room temperature. The single-electron transistor comprises a substrate (SuB) formed of a first insulating material, source (S) and drain (D) electrodes disposed on the substrate, and a metal nanoparticle (L) disposed between the source and drain electrodes that has a spatial dimension of a magnitude of approximately 12 nm or less. An analyte-specific binding agent is disposed on a surface of the nanoparticle. A binding event occurring between a target analyte and the binding agent causes a detectable change in the current-voltage characteristic.

IPC 8 full level

G01N 33/543 (2006.01); **B82B 1/00** (2006.01); **G01N 27/414** (2006.01); **H01L 29/06** (2006.01); **H01L 29/66** (2006.01)

CPC (source: EP)

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Citation (search report)

- No further relevant documents disclosed
- See references of WO 0113432A1

Cited by

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