

Title (en)

FET SENSOR WITH A SPECIALLY CONFIGURED GATE ELECTRODE FOR THE HIGHLY SENSITIVE DETECTION OF ANALYTES

Title (de)

FET-SENSOR MIT BESONDERS AUSGESTALTETER GATEELEKTRODE ZUR HOCHEMPFLINDLICHEN DETEKTION VON ANALYTEN

Title (fr)

DETECTEUR FET A ELECTRODE DE COMMANDE SPECIALEMENT CONFIGUREE POUR LA DETECTION HAUTE SENSIBILITE D'ANALYTES

Publication

EP 1456636 A1 20040915 (DE)

Application

EP 02795005 A 20021214

Priority

- DE 0204594 W 20021214
- DE 10163557 A 20011221

Abstract (en)

[origin: WO03056322A1] Disclosed is a sensor comprising a substrate, a source contact region, a drain contact region, and the gate oxide of a transistor. A gate electrode is disposed between the gate oxide and a detection electrode made of a nonconducting material. The contact area Asens between the gate electrode and the detection electrode is larger than the contact area Agate between the gate electrode and the gate oxide, whereby the receptor can be immobilized on the surface of the detection electrode in a technically simple manner while the small contact area Agate between the gate electrode and the transistor provides for high sensitivity for detecting the analyte. According to the inventive method for detecting at least one analyte, at least one analyte is brought into contact with a receptor immobilized at the detection electrode so as to modify the electrical charge at the surface of the detection electrode. The analyte is detected by detecting the modified voltage in the transistor.

IPC 1-7

G01N 27/414; **C12Q 1/00**

IPC 8 full level

G01N 27/414 (2006.01); **C12Q 1/00** (2006.01); **G01N 33/543** (2006.01); **G01N 33/551** (2006.01); **G01N 33/552** (2006.01); **H01L 29/78** (2006.01)

CPC (source: EP US)

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Citation (search report)

See references of WO 03056322A1

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