

Title (en)
CHEMICALLY-SENSITIVE FIELD EFFECT TRANSISTORS, SYSTEMS, AND METHODS FOR MANUFACTURING AND USING THE SAME

Title (de)
CHEMISCH SENSITIVE FELDEFFEKTTRANSISTOREN, SYSTEME UND VERFAHREN ZUR HERSTELLUNG UND VERWENDUNG DAVON

Title (fr)
TRANSISTORS À EFFET DE CHAMP CHIMIQUEMENT SENSIBLES, SYSTÈMES, ET PROCÉDÉS DE FABRICATION ET D'UTILISATION ASSOCIÉS

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Abstract (en)
[origin: WO2018026830A1] This invention concerns Chemically-sensitive Field Effect Transistors (ChemFETs) that are preferably fabricated using semiconductor fabrication methods on a semiconductor wafer, and in preferred embodiments, on top of an integrated circuit structure made using semiconductor fabrication methods. The instant ChemFETs typically comprise a conductive source (22), a conductive drain (24), and a channel (30) composed of a one-dimensional (1D) or two-dimensional (2D) transistor nanomaterial, which channel extends from the source to the drain and is fabricated using semiconductor fabrication techniques on top of a wafer. The ChemFET also includes a gate, often the gate voltage is provided through a fluid or solution proximate the ChemFET. Such ChemFETs, preferably configured in independently addressable arrays, may be employed to detect a presence and/or concentration changes of various analyte types in chemical and/or biological samples, including nucleic acid hybridization and/or sequencing reactions.

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