Title (en)

MICROELECTRODES MADE FROM STRUCTURED DIAMOND FOR NEURAL INTERFACING APPLICATIONS

Title (de)

MIKROELEKTRODEN AUS STRUKTURIERTEM DIAMANT FÜR NEURONALE SCHNITTSTELLENANWENDUNGEN

Title (fr)

MICROÉLECTRODES À BASE DE DIAMANT STRUCTURÉ POUR DES APPLICATIONS D'INTERFAÇAGE NEURONAL

Publication

EP 3057499 A1 20160824 (FR)

Application

EP 14798989 A 20141014

Priority

- FR 1360074 A 20131016
- IB 2014065305 W 20141014

Abstract (en)

[origin: WO2015056175A1] A microelectrode (2) for neural interfacing applications comprises a first substrate layer (4), a second attachment layer (6), and a third layer (8) forming the active part of the electrode (2) of which the material consists of synthetic diamond made electrically conductive by doping with atoms chosen from boron, nitrogen and phosphorus atoms. The material of the third layer (8) is a textured material that comprises a compact assembly, in the form of a brush, of tubes (26) each comprising, in the form of at least one peripheral outer layer, polycrystalline diamond made electrically conductive by doping. The tubes (26) are separated from each other at the first fixed ends (28) of same and project the free ends (30) of same away from the first and second layers (4, 6) in a direction that is substantially vertical relative to the extension plane (20) of the second layer (6). A method for producing said microelectrode is also described.

IPC 8 full level

A61B 5/04 (2006.01); **A61B 5/0478** (2006.01); **C25B 11/12** (2006.01); **G01N 27/30** (2006.01); **G01N 27/327** (2006.01); **H01L 29/16** (2006.01); **H01L 29/167** (2006.01); **H01M 4/02** (2006.01); **H01M 4/04** (2006.01)

CPC (source: EP US)

A61B 5/24 (2021.01 - EP US); **A61B 5/291** (2021.01 - EP US); **A61N 1/0551** (2013.01 - US); A61B 2562/125 (2013.01 - EP US); G01N 27/308 (2013.01 - EP US); G01N 27/3278 (2013.01 - EP US)

Citation (search report)

See references of WO 2015056175A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

FR 3011727 A1 20150417; **FR 3011727 B1 20180302**; AU 2014335775 A1 20160505; EP 3057499 A1 20160824; US 2016287113 A1 20161006; WO 2015056175 A1 20150423

DOCDB simple family (application)

FR 1360074 A 20131016; AU 2014335775 A 20141014; EP 14798989 A 20141014; IB 2014065305 W 20141014; US 201415029607 A 20141014