

Title (en)

EPIDERMAL SENSOR SYSTEM AND PROCESS

Title (de)

EPIDERMAL SENSOR SYSTEM UND VERFAHREN

Title (fr)

SYSTÈME ET PROCÉDÉ DE CAPTEUR ÉPIDERMIQUE

Publication

EP 3122248 A1 20170201 (EN)

Application

EP 15768202 A 20150327

Priority

- US 201461971945 P 20140328
- US 2015023052 W 20150327

Abstract (en)

[origin: WO2015148957A1] Epidermal electronics are sensors with mechanical properties matching human epidermis. Their manufacturing process includes photolithography and dry and wet etching within cleanroom facilities. The high cost of manpower, materials, photo masks, and facilities greatly hinders the commercialization potential of disposable epidermal electronics. In contrast, an embodiment of the invention includes a low cost, high throughput, bench top "cut and paste" method to complete the freeform manufacture of epidermal sensor system (ESS) in minutes. This versatile method works for many types of thin metal and polymeric sheets and is compatible with many tattoo adhesives or medical tapes. The resultant ESS is highly multimaterial and multifunctional and may measure ECG, EMG, skin temperature, skin hydration, as well as respiratory rate. Also, a stretchable planar coil made of serpentine ribbons can be used as a wireless strain gauge and/or a near field communication (NFC) antenna. Other embodiments are described herein.

IPC 8 full level

A61B 5/296 (2021.01)

CPC (source: EP)

A61B 5/0002 (2013.01); **A61B 5/01** (2013.01); **A61B 5/053** (2013.01); **A61B 5/259** (2021.01); **A61B 5/291** (2021.01); **A61B 5/296** (2021.01); **A61B 5/6833** (2013.01); **A61B 2560/0412** (2013.01); **A61B 2562/125** (2013.01); **A61B 2562/164** (2013.01); **H05K 1/0283** (2013.01); **H05K 3/046** (2013.01); **H05K 2201/0145** (2013.01); **H05K 2201/0154** (2013.01); **H05K 2201/09263** (2013.01); **H05K 2201/10151** (2013.01); **H05K 2203/1194** (2013.01)

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)

WO 2015148957 A1 20151001; CN 106413542 A 20170215; EP 3122248 A1 20170201; EP 3122248 A4 20180502

DOCDB simple family (application)

US 2015023052 W 20150327; CN 201580028107 A 20150327; EP 15768202 A 20150327