

Title (en)

METHOD FOR TRANSFERRING A USEFUL LAYER ONTO A SUPPORT SUBSTRATE

Title (de)

VERFAHREN ZUR ÜBERTRAGUNG EINER NÜTZLICHEN SCHICHT AUF EIN TRÄGERSUBSTRAT

Title (fr)

PROCEDE DE TRANSFERT D'UNE COUCHE UTILE SUR UN SUBSTRAT SUPPORT

Publication

EP 3939077 A1 20220119 (FR)

Application

EP 20713947 A 20200226

Priority

- FR 1902671 A 20190315
- FR 2020050368 W 20200226

Abstract (en)

[origin: WO2020188168A1] The invention relates to a method for transferring an useful layer onto a support substrate, said method involving the following steps: a) providing a donor substrate comprising a buried fragile plane, the useful layer being delimited by a front face of the donor substrate and the buried fragile plane; b) providing a support substrate; c) joining the donor substrate by its front face to the support substrate over a bonding interface to form a bonded structure; d) annealing the bonded structure to apply a weakening thermal budget thereto and bringing the buried fragile plane to a defined break-off level; e) initiating a fracture wave in the buried fragile plane by applying stress to the bonded structure, the fracture wave self-propagating along the buried fragile plane to lead to the transfer of the useful layer onto the support substrate. The transfer method is characterized in that the fracture wave is initiated while the bonded structure is subjected to a maximum temperature of 150° to 250°C.

IPC 8 full level

H01L 21/762 (2006.01)

CPC (source: EP KR US)

H01L 21/26506 (2013.01 - US); **H01L 21/76254** (2013.01 - EP KR US); **H01L 21/7806** (2013.01 - US)

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 3093860 A1 20200918; FR 3093860 B1 20210305; CN 113491005 A 20211008; EP 3939077 A1 20220119; JP 2022525162 A 20220511; JP 7510434 B2 20240703; KR 20210134783 A 20211110; SG 11202109929X A 20211028; TW 202036783 A 20201001; US 11881429 B2 20240123; US 2022157651 A1 20220519; WO 2020188168 A1 20200924

DOCDB simple family (application)

FR 1902671 A 20190315; CN 202080016818 A 20200226; EP 20713947 A 20200226; FR 2020050368 W 20200226; JP 2021555271 A 20200226; KR 20217032934 A 20200226; SG 11202109929X A 20200226; TW 109105910 A 20200224; US 202017439300 A 20200226