

Title (en)

METHOD AND DEVICE FOR REMOVING A CUT-OUT FROM A LAYER OF MATERIAL

Title (de)

VERFAHREN UND EINRICHTUNG ZUM ABLÖSEN EINES AUSSCHNITTS EINER MATERIALSCHICHT

Title (fr)

PROCEDE ET DISPOSITIF POUR DETACHER UNE PARTIE DECOUPEE D'UNE COUCHE DE MATERIAU

Publication

**EP 1042792 A1 20001011 (DE)**

Application

**EP 99971581 A 19991028**

Priority

- DE 19849658 A 19981029
- EP 9908180 W 19991028

Abstract (en)

[origin: DE19849658A1] The invention relates to a method for removing a cut-out which is placed on a support (40) from a layer of material (30) which extends in a layer plane and has a particular layer thickness, by means of a laser pulse (16) which penetrates through the support (40). The aim of the invention is to provide a means of removing the cut-outs from a layer of material (30) with as little thermal stress and as few thermal side effects as possible. To this end, the laser pulse (16) produces burnt material in a partial layer volume (50) of the cut-out which is adjacent to the support and is located within a stretch of the beam cross section (Q) of the laser pulse (16) in the layer plane and extends crosswise to the layer plane over part of the layer thickness (D), said burnt material being in a thermodynamic state of non-equilibrium with a density resembling that of a solid and especially, a temperature above the critical temperature. A coherent, solid partial layer (60) remains in the cut-out on the side of the partial layer volume (50) facing the support (40). This is moved away from the support (40) by the burnt material.

IPC 1-7

**H01L 21/268**; C23C 14/28; H01L 39/24; B23K 26/00

IPC 8 full level

**B23K 26/18** (2006.01); **H05K 3/04** (2006.01)

CPC (source: EP US)

**B23K 26/009** (2013.01 - EP US); **B23K 26/18** (2013.01 - EP US); **H05K 3/046** (2013.01 - EP US); **Y10T 156/1158** (2015.01 - EP US)

Citation (search report)

See references of WO 0026951A1

Designated contracting state (EPC)

DE FR GB NL

DOCDB simple family (publication)

**DE 19849658 A1 20000504**; EP 1042792 A1 20001011; US 6521068 B1 20030218; WO 0026951 A1 20000511

DOCDB simple family (application)

**DE 19849658 A 19981029**; EP 9908180 W 19991028; EP 99971581 A 19991028; US 60719100 A 20000628