

Title (en)
METHOD FOR MONITORING AND CONTROL OF PULSED LASER MICRO-PROCESSING AND APPARATUS FOR CARRYING OUT THIS METHOD

Title (de)
VERFAHREN ZUR ÜBERWACHUNG UND STEUERUNG DER MIKROBEARBEITUNG MIT GEPULSTEM LASER UND VORRICHTUNG ZUR DURCHFÜHRUNG DES VERFAHRENS

Title (fr)
PROCÉDÉ DE SURVEILLANCE ET DE COMMANDE DE MICROTRAITEMENT À LASER PULSÉ ET APPAREIL POUR LA MISE EN OEUVRE DE CE PROCÉDÉ

Publication
EP 4323141 A1 20240221 (EN)

Application
EP 21851962 A 20211223

Priority
• CZ 2021186 A 20210414
• CZ 2021050157 W 20211223

Abstract (en)
[origin: WO2022218451A1] Subject-matter of the invention is the method for monitoring and control of pulsed laser micro-processing, wherein the laser pulses repeatedly impinge on the workpiece (10), which is heated by them and emits the thermal radiation (12), which is detected by the detection system (3), which creates the time course of the signal, and in the time course of the signal the changes are found corresponding to changes in the state, structure or properties of the material of the workpiece (10), caused by at least one laser pulse, and by using these changes at least one characteristic number is determined, which has a dimension of time or signal, and the value of the characteristic number is compared with a range of values predetermined for a correctly performed operation, and in case of an incorrect value of the characteristic number the parameters of the pulsed laser micro-processing are corrected, this method of monitoring and control of the pulsed laser micro-processing being repeated within the laser micro-processing, as well as the apparatus for carrying out the method for monitoring and control of pulsed laser micro-processing comprising a detection optical system (1), a detection system (3), a recording system (4), an evaluation system (5), a control system (6), a laser (7) and a laser optical system (8), and the recording system (4) comprising an analog-to-digital converter, the evaluation system (5) comprising a programmable gate array and the detection optical system (1) comprising a scanning head.

IPC 8 full level
B23K 26/03 (2006.01); **B23K 26/046** (2014.01); **B23K 26/352** (2014.01); **B23K 26/354** (2014.01); **B23K 26/362** (2014.01)

CPC (source: CZ EP)
B23K 26/034 (2013.01 - CZ EP); **B23K 26/046** (2013.01 - EP); **B23K 26/0624** (2015.10 - CZ EP); **B23K 26/0626** (2013.01 - CZ EP); **B23K 26/073** (2013.01 - CZ); **B23K 26/082** (2015.10 - EP); **B23K 26/0892** (2013.01 - CZ EP); **B23K 26/352** (2015.10 - EP); **B23K 26/354** (2015.10 - EP); **B23K 26/355** (2018.07 - EP); **B23K 26/3576** (2018.07 - EP); **B23K 26/362** (2013.01 - EP)

Citation (search report)
See references of WO 2022218451A1

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

Designated validation state (EPC)
KH MA MD TN

DOCDB simple family (publication)
WO 2022218451 A1 20221020; CZ 2021186 A3 20221026; EP 4323141 A1 20240221

DOCDB simple family (application)
CZ 2021050157 W 20211223; CZ 2021186 A 20210414; EP 21851962 A 20211223