

Title (en)
METHOD FOR LASER MATERIAL MACHINING AND LASER-MACHINING INSTALLATION

Title (de)
VERFAHREN ZUR LASERMATERIALBEARBEITUNG UND LASERBEARBEITUNGSANLAGE

Title (fr)
PROCÉDÉ D'USINAGE LASER DE MATIÈRE ET INSTALLATION D'USINAGE LASER

Publication
EP 4076828 A1 20221026 (DE)

Application
EP 20829773 A 20201217

Priority
• DE 102019135283 A 20191219
• EP 2020086643 W 20201217

Abstract (en)
[origin: WO2021122894A1] A method for laser material machining of at least partially transparent material (109) by sequentially modifying adjoining portions (125A, 125B) of the material (109) with pulsed laser beams comprises the steps of: working the material (109) with a first pulsed laser beam (103) for producing first modifications (119, 143), wherein the first modifications (119, 143) form a shielding surface (115), generating a second pulsed laser beam (103'), which when radiated into the material (109) forms a focusing zone (107'), which is formed by constructive interference of laser radiation that runs at an angle in the direction of the second focusing-zone axis (113'), and working the material (109) with the second pulsed laser beam (103') by the focusing zone (107') being moved in relation to the material (109) for producing second modifications (119') in a second portion (125B) of the material (109), wherein at least part of the laser radiation running at an angle in the direction of the second focusing-zone axis (113') impinges on the shielding surface (115). The shielding surface (115) can interfere with, and in particular suppress, the constructive interference of part of the laser radiation of the second pulsed laser beam that impinges on the shielding surface (115) with part of the laser radiation of the second pulsed laser beam (103') that does not impinge on the shielding surface (115).

IPC 8 full level
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Citation (search report)
See references of WO 2021122894A1

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