

Title (en)
DEVICE AND METHOD FOR WELDING OF GLASS FIBERS TO A MICRO LENS ARRAY TO MANUFACTURE A FIBER COLLIMATOR ARRAY

Title (de)
VORRICHTUNG UND VERFAHREN ZUM SCHWEISSEN VON GLASFASERN AN EINE MIKROLINSENANORDNUNG ZUR HERSTELLUNG EINER FASERKOLLIMATORANORDNUNG

Title (fr)
DISPOSITIF ET PROCÉDÉ DE SOUDAGE DE FIBRES DE VERRE À UN RÉSEAU DE MICROLENTILLES POUR FABRIQUER UN RÉSEAU DE COLLIMATEURS DE FIBRES

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EP 3695257 A1 20200819 (EN)

Application
EP 19742231 A 20190725

Priority
• EP 18186401 A 20180730
• EP 2019070030 W 20190725

Abstract (en)
[origin: WO2020025438A1] A device and a method for fabrication of fiber optic collimators is described. The fibers are attached to a lens or a micro lens array without the need for prefabricated fiber arrays with v-grooves or holes. A device for welding of a glass fiber to a lens comprises a retroreflector reflecting light back into the collimator, a detector coupled to the currently processed fiber for receiving light from the collimator and generating an output indicating the received light power and a positioning means for positioning the glass fiber relative to the lens based on the detector output. The amount of light received by the detector is a measure for the attenuation of the collimator. The signal output of the detector is used to move the fiber into the position with the lowest attenuation and weld it at this position to the lens. All irregularities and deviation of the individual lenses from a perfect lens caused by the fabrication tolerances are compensated by this method.

IPC 8 full level
G02B 6/32 (2006.01)

CPC (source: EP)
G02B 6/32 (2013.01); **G02B 6/4225** (2013.01)

Citation (examination)
• DE 10204012 B4 20050127 - FRAUNHOFER GES FORSCHUNG [DE]
• US 6414262 B1 20020702 - RAO MUKKAMALA KAMESHWAR [SG]
• KAISER ELKE: "Laser Welding of Glass Replaces Glueing Procedure", LASER TECHNIK JOURNAL, 1 January 2016 (2016-01-01), pages 22 - 25, XP055837532, Retrieved from the Internet <URL:https://onlinelibrary.wiley.com/doi/pdfdirect/10.1002/latj.201600021> [retrieved on 20210903]
• DE PABLOS-MARTÍN A. ET AL: "Laser welding of glasses using a nanosecond pulsed Nd:YAG laser", OPTICS AND LASERS IN ENGINEERING, vol. 90, 1 March 2017 (2017-03-01), AMSTERDAM, NL, pages 1 - 9, XP055837520, ISSN: 0143-8166, Retrieved from the Internet <URL:https://www.sciencedirect.com/science/article/pii/S0143816616302032/pdf?md5=8cc256e53a5588382c822363a9fa856e&pid=1-s2.0-S0143816616302032-main.pdf> DOI: 10.1016/j.optlaseng.2016.09.009
• See also references of WO 2020025438A1

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