

Title (en)

DEEP UV LASER INTERNALLY INDUCED DENSIFICATION IN SILICA GLASSES

Title (de)

INTERN BEWIRKTE VERDICHTUNG IN SILIKA-GLASARTEN MIT LASER IM TIEFEN UV-BEREICH

Title (fr)

DENSIFICATION PROFONDE INDUITE DE MANIERE INTERNE PAR UN LASER UV DANS DES VERRES DE SILICE

Publication

EP 1266249 A4 20030716 (EN)

Application

EP 00970526 A 20000929

Priority

- US 0026939 W 20000929
- US 15673799 P 19990930

Abstract (en)

[origin: WO0123923A1] A method of writing a light guiding structure (26) in a bulk glass substrate (4) including selecting a bulk glass substrate (4) made from a soft silica based material. An excimer laser beam (5) is focused at a focus point (3) within the substrate while translating the focus relative to the substrate along the scan path. The laser beam (5) is moved at a scan speed so as to induce an increase in the refractive index of the material along the scan path relative to that of the unexposed material, while at the same time incurring very little laser induced breakdown of the material along the scan path. Various optical devices, including waveguides, can be made in this way.

IPC 1-7

G02B 6/02

IPC 8 full level

G02B 6/122 (2006.01); **G02B 6/12** (2006.01); **G02B 6/13** (2006.01)

CPC (source: EP KR)

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Citation (search report)

- [X] EP 0797112 A1 19970924 - JAPAN SCIENCE & TECH CORP [JP], et al
- [X] US 5634955 A 19970603 - ARAUJO F G [BR], et al
- [X] PATENT ABSTRACTS OF JAPAN vol. 1999, no. 01 29 January 1999 (1999-01-29)
- [X] PATENT ABSTRACTS OF JAPAN vol. 1999, no. 11 30 September 1999 (1999-09-30)
- [A] SVALGAARD M ET AL: "Direct UV writing of buried singlemode channel waveguides in Ge-doped silica films", ELECTRONICS LETTERS, IEE STEVENAGE, GB, vol. 30, no. 17, 18 August 1994 (1994-08-18), pages 1401 - 1403, XP006000929, ISSN: 0013-5194
- [A] SVALGAARD M: "Direct writing of planar waveguide power splitters and directional couplers using a focused ultraviolet laser beam", ELECTRONICS LETTERS, IEE STEVENAGE, GB, vol. 33, no. 20, 25 September 1997 (1997-09-25), pages 1694 - 1695, XP006007994, ISSN: 0013-5194
- See references of WO 0123923A1

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DOCDB simple family (application)

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