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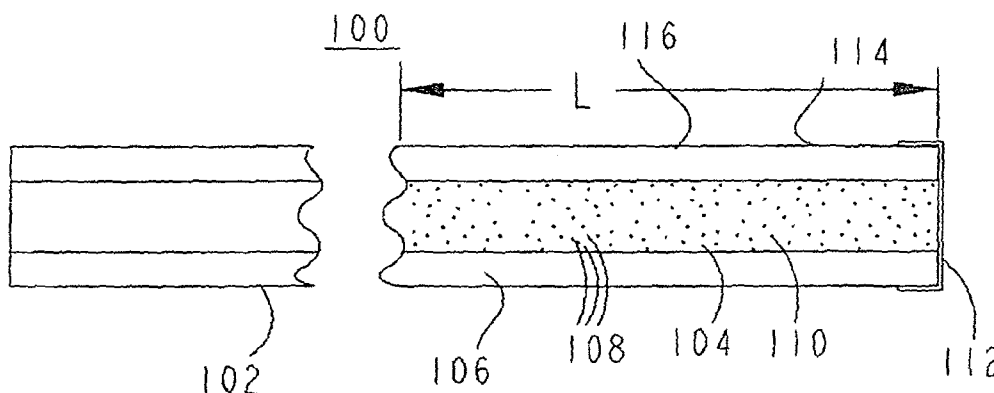
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(57) Abstract: A high power density light delivery device is presented that uses an optical fiber with a diffuser attached at a distal end for use in, for example, photodynamic therapy and laser induced thermotherapy. Uniform scattering in the diffuser section is obtained by either inducing differences in refractive index profiles of the core or in the core/cladding interface with the use of scattering centers or nano-voids. Nano-voids are created in the core or core-cladding interface by focusing high power laser energy or picosecond/femtosecond laser pulses on the quartz fiber material to induce defects. A special method is used that writes defects into or near the core/cladding boundary through the jacket, without the necessity to first remove the jacket and then recoat the fiber. The method uses a wavelength that is highly transmissive in the jacket and fiber but absorbed in the fiber at very short laser pulses with high peak power.



WO 2008/024397 A3

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - G02B 6/02 (2007.10)
USPC - 385/123
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
MicroPatent

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/0128944 A1 (SKUTNIK) 10 July 2003 (10.07.2003) entire document	1-12

Further documents are listed in the continuation of Box C.

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