

Title (en)
OPTICAL WAVEGUIDE

Title (de)
LICHTWELLENLEITER

Title (fr)
FIBRE OPTIQUE

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Application
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Abstract (en)
[origin: WO2020245244A1] The invention relates to an optical waveguide comprising two or more light-guiding cores (1a-1e) which extend continuously from one end of the optical waveguide to the other along the longitudinal extent of said optical waveguide in a manner parallel to and at a distance from one another, and comprising a first cladding (2) surrounding the cores (1a-1e). The problem addressed by the invention is that of providing a multi-core optical waveguide for high-power operation with a reduced system complexity in relation to the prior art. According to the invention, this problem is solved by virtue of the cores (1a-1e) being arranged with respect to one another and spaced apart from one another in such a way that the propagation modes of the light propagating in the optical waveguide at a working wavelength couple to one another, wherein the length of the optical waveguide is chosen in such a way that the light input coupled into only a single one of the cores (1a-1e) at one end of the optical waveguide initially spreads to the other cores (1a-1e) during the propagation through the optical waveguide and, after passing through the optical waveguide, leaves the optical waveguide at the other end again from a single core (1a), with at least 60%, preferably at least 75%, of the total luminous power propagating in the optical waveguide. Moreover, the invention relates to a laser system comprising such an optical waveguide as an optical amplifier, and to a method for guiding light in an optical waveguide.

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