Title (en)

MACRO-GRADIENT OPTICAL DENSITY TRANSMISSIVE LIGHT CONCENTRATORS, LENSES AND COMPOUND LENSES OF LARGE GEOMETRY, AND FABRICATION THEREOF

Publication

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Application

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Abstract (en)

[origin: WO8901640A1] Gradient optical density transmissive light directing devices (20, 24, 26, 28, 30) and fabrication thereof are disclosed herein. Examples of such devices include concentrators, lenses and compound lenses. The present invention teaches a process for the fabrication of glass light transmitting devices having a chosen gradient in index of refraction either bidirectionally (radially and longitudinally relative to an optical axis) or in three dimensions. The present invention further describes the design of several interesting optical devices by particular choices of the gradient in the index of refraction thereof. Such articles have numerous uses in the optics, optical fiber and solar technology industries for the purposes of designing compound lens systems using a single, integral lens, coupling light into fibers and for concentrating and directing light from a source having a significant angular variation to energy collecting and/or conversion devices such as a photovoltaic cell, to name but a few applications.

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