

Title (en)
HOLLOW OPTICAL WAVEGUIDE HAVING OPENINGS, IN PARTICULAR FOR SUPPLYING A PHOTOBIOREACTOR WITH LIGHT AND NUTRIENTS

Title (de)
HOHLER LICHTLEITER MIT ÖFFNUNGEN, INSBESONDERE ZUR VERSORGUNG EINES PHOTOBIOREAKTORS MIT LICHT UND NÄHRSTOFFEN

Title (fr)
GUIDE DE LUMIÈRE CREUX POURVU D'ORIFICES, EN PARTICULIER POUR ALIMENTER UN PHOTOBIORÉACTEUR EN LUMIÈRE ET EN SUBSTANCES NUTRITIVES

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Abstract (en)
[origin: WO2015062563A1] The invention relates to an elongated hollow optical waveguide (1), which in particular can be used in a photobioreactor to supply phototropic organisms with both light and nutrients. The optical waveguide (1) comprises a cladding (3) made of transparent material, which surrounds a hollow core (5). The hollow core has a diameter of at least 1 mm, preferably at least 3 mm or 1 cm. A plurality of openings (7) having a diameter of at least 0.5 mm, preferably at least 1 mm, are formed in the cladding (3). Light can propagate through the transparent cladding, and light can laterally (19) exit through the transparent material preferably along the entire optical waveguide (1). Nutrients (15) can be conducted into the interior of the photobioreactor through the hollow core (5). Conversely, parts of the solution mixed with organisms also can be suctioned out through the hollow core (5), for example in order to analyze the organisms.

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