Title (en)

GERMANIUM-FREE SILICATE WAVEGUIDE COMPOSITIONS FOR ENHANCED L-BAND AND S-BAND EMISSION AND METHOD FOR ITS MANUFACTURE

Title (de)

GERMANIUMFREIE SILIKAT-WELLENLEITERZUSAMMENSETZUNGEN ZUR VERBESSERTEN EMISSION IM L-BAND UND S-BAND UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

COMPOSITIONS DE GUIDES D'ONDES DE SILICATE EXEMPT DE GERMANIUM POUR LES EMISSIONS EN BANDE S ET BANDE L ET PROCEDE DE FABRICATION

Publication

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Application

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Abstract (en)

[origin: WO03057643A2] A method for manufacturing an optical fiber and the resulting article. The method including the steps of: providing a substrate tube; depositing high purity silica-based cladding layers on the inside of the tube; depositing a germanium-free core comprising a glass including silica, and oxides of Al, La, Er, and Tm; collapsing the substrate tube to form a preform; and drawing the preform to yield an optical fiber. A germanium-free co-doped silicate optical waveguide in accordance with the present invention includes a core material comprising silica, aluminum, lanthanum, erbium and thulium, wherein the concentration of Er is from 15 ppm to 3000 ppm; Al is from 0.5 mol% to 15 mol%; La is less than 2 mol%; and Tm is from 150 ppm to 10000 ppm. In an exemplary specific embodiment the concentration of Al is from 4 mol% to 10 mol%; and the concentration of Tm is from 150 ppm to 3000 ppm. The core may further include F. In an exemplary embodiment, the concentration of F is less than or equal to 6 mol%. The waveguide may be an optical fiber, a shaped fiber or other light-guiding waveguides. An amplifier according to the present invention includes the optical fiber described above.

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