



Optica Applicata 2007(Vol.37), No.3, pp. 279-294

Loss analysis of single mode telecommunication fiber thermally-diffused core areas

Marek Ratuszek

SEARCH

[Advanced search](#)

Keywords

single mode fibers, thermally-diffused expanded core (TEC), dopant distribution, refractive index profile, Gaussian approximation

Abstract

In this work, diffusion processes in thermally connected cylindrical fibers with weakly guiding and circular cross-section, that is, telecommunication fibers, have been presented. There have been discussed diffusion distributions of the core dopant of fibers spliced at $T \approx 2000$ °C. Gaussian approximations of the core dopant concentration distribution and refractive index in the connecting area of single mode telecommunication fibers have been presented. Theoretical analysis of propagation and loss characteristics for thermally-diffused expanded core (TEC) of single mode telecommunication fibers has been performed, as well. Consistence of theoretical calculation results with experimental data, achieved on the basis of connecting telecommunication fibers with significantly different parameters, has been proved.



911.6 kB

[Back to list](#)

© Copyright 2007 T.Przerwa-Tetmajer All Rights Reserved 2007

stat4u

[About Optica Applicata](#)

[Current issue](#)

[Browse archives](#)

[Search](#)

[Editorial Board](#)

[Instructions for Authors](#)

[Ordering](#)

[Contact us](#)

