

# Study of the pump absorption efficiency in D-shaped double clad optical fiber

[Narro-García, R. .](#), [Arronte, M.](#), [Guerrero-Contreras, J.](#), [Rodríguez, E. .](#)

Laboratorio de Tecnología Láser, CICATA-IPN Unidad Altamira, km 14.5 Carr. Tampico-Puerto Ind. Altamira, Altamira 89600, TAMPS, Mexico

## Abstract

In this paper, we evaluate numerically the pump absorption efficiency in a D-shaped fiber. The study is carried out through the ray tracing method in three dimensions. The simulation results show that D-shaped fiber has higher pump power absorption when the core is placed off the geometric center of the inner cladding. On the other hand, when the incidence of the pump beam is off the geometrical center of the fiber cross-section or the angle of incidence increases, the pump absorption efficiency decreases in a circular-shaped fiber, while in D-shaped fiber it is higher and is kept constant.

## [Optica Applicata](#)

Volume 42, Issue 3, 2012, Pages 587-596