

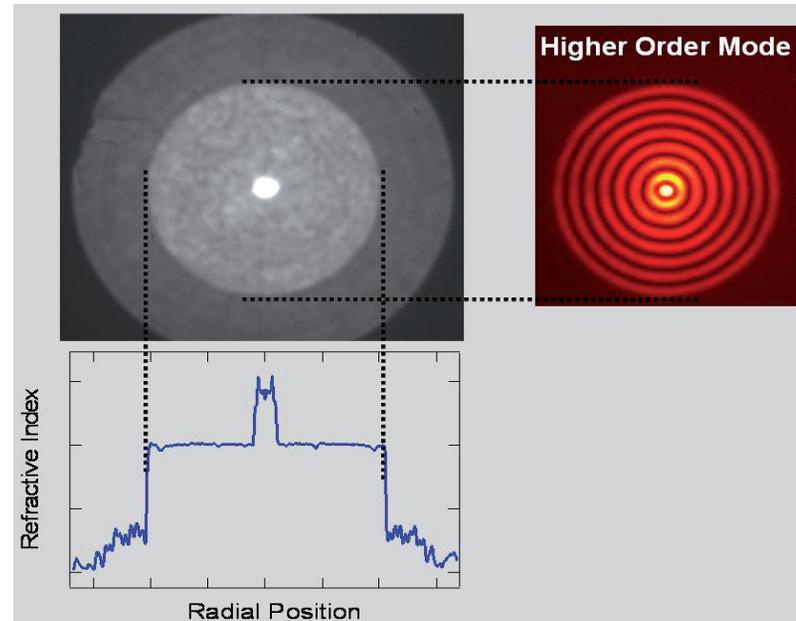
Optical fibers: intelligent structures that manipulate light



Siddharth Ramachandran
OFS Laboratories

PhD in EE, Illinois 1998
Bell Labs 1998 - 2001
OFS Laboratories 2001 -

This talk will describe the physics as well as applications of Higher-Order-Mode fibers.



2:30 pm, Monday, October 29, 2007
Sloan Auditorium
Goergen Building
Refreshments follow

Optical fibers: intelligent structures that manipulate light

Siddharth Ramachandran

OFS Laboratories

Fibers have traditionally been conduits for optical signals that have revolutionised the field of optical communications. With the advent of complex waveguide designs and "holey" fibers, they can do much more than simply transmit light – they can also manipulate optical pulses in the temporal, spectral as well as spatial domain.

This talk will introduce the physics of guided-wave structures that enables such "intelligent" fibers. As a means of illustration, we will focus on an emerging class of fibers – the so called higher-order-mode (HOM) fibers that exploit the unique capability of a single fiber to simultaneously transmit light in several different paths. Finally, we will offer some thoughts on the future prospects of "intelligent" guided-wave structures, both from the standpoint of studying physical phenomena, and from the standpoint of realising novel devices with applications in emerging areas such as sensing and biology.

Dr Siddharth Ramachandran obtained his Ph.D. in Electrical Engineering from the University of Illinois, Urbana, in 1998. His graduate work focused on spectroscopic investigations of rare-earth doped chalcogenide glasses. Since Nov. 1998, he has worked at Bell Laboratories, Lucent Technologies and subsequently OFS Laboratories, OFS-Fitel, first as a Member of Technical Staff, and since March 2003, as a Distinguished Member of Technical Staff. Dr. Ramachandran's research focuses on fiber and fiber-grating devices in specialty fibers. He has authored 106 refereed journal and conference publications, 2 book-chapters, 26 patent applications, and is the editor of an upcoming Springer-Verlag book on "Fiber-based dispersion compensation." Dr. Ramachandran has served on several conference committees, and was most recently program chair for the IEEE-LEOS Summer Topical meetings in 2006.

Dr. Ramachandran is a member of IEEE-LEOS.