

# Optical Fiber: Empowering a New Global Era

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## **Lecture details:**

**Date:** 12<sup>th</sup> May, 2017, **Time:** 5:15 PM, **Venue:** L-8, Lecture hall complex

**Abstract:** The deployment of optical fibers has been a game changing technology for telecommunication network across the globe and made a dramatic socio-economic impact. Transmission of data rates up to terabit per sec is now a reality. The success behind the high capacity communication is in development of silica based low loss fibers and commercialization of the technology. High speed internet access is now reaching every home, even to the remote villages. Erbium doped Fiber Amplifier (EDFA) has been the enabling technology behind this revolution. Fiber to the Home (FTTH) with the idea of convergence of video, voice and data communication is progressing at a rapid pace to create smart cities. The advent of Specialty Optical Fibers enabled extending the application areas beyond the telecommunication arena for a host of industrial, medical and strategic uses. This group of fibers is identified by their special design, composition and functionality. Examples include rare earth doped fibers for optical amplifiers as well as fiber lasers at different wavelengths, photosensitive fibers for gratings based sensors, radiation resistant fibers for hazardous environment and microstructured fibers for supercontinuum sources.

As a premier glass research institute, CSIR-CGCRI pioneered the specialty fiber development activity in India and is now recognised as a global player in this field. A comprehensive state of the art facility for preform fabrication, fiber drawing and characterization has been established in the Institute. The R&D is focused towards fiber based components and devices for civil and strategic applications.

**About the speaker:** *Dr. Ranjan Sen obtained his Ph.D. degree in Chemical Engineering from Jadavpur University, Kolkata. At present he is holding the position of Chief Scientist and Head, Glass Division at CSIR-Central Glass & Ceramic Research Institute, Kolkata. He is Head, Fiber Optics & Photonics Division (FOPD) too: a Division he has been closely associated with for the last 30 years. At FOPD he is leading a number of national and international projects in the field of specialty optical fibers. Currently, his prime research interest is in the field of high power fiber lasers for industrial/medical applications, specialty fibers for adverse environments and specialty glass for high power high energy lasers.*



*Dr. Sen has published more than 130 papers in journals & conferences, holds 30 patents in various countries and has two book chapters to his credit. He is the recipient of Fellowship of German Academic Exchange Service in 1990-91, Visiting Scientist in TU Braunschweig, Germany during 2004-05, CSIR-India Technology Award in 2012 and NRDC-India Innovation Award for the year 2013.*