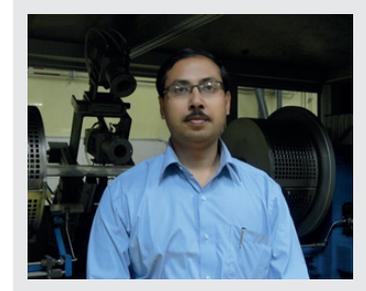


Foreword about Anirban Dhar, Scientist of Fiber Optics & Photonics Division, CSIR-Central Glass & Ceramic Research Institute, Kolkata, India:

Anirban Dhar was born in Kolkata, India in 1977. He graduated in Chemistry from Calcutta University in 2001. Anirban started his research work on fabrication of rare-earth doped specialty optical fiber and received his Ph.D degree in Chemistry from Jadavpur University, Kolkata, India in 2008. He then joined in Optical Fiber Technology Division, Institute of Photonics & Electronics, ASCR v.v.i, Prague, Czech Republic as postdoctoral fellow in 2009 and was involved in many important projects in different capacity as member or as principal investigator. In August 2010, he moved to Optoelectronics Research Centre, University of Southampton, UK and was involved in many important EPSRC and industry funded projects. Anirban joined as Scientist in Fiber Optics & Photonics Division of CSIR-CGCRl in May, 2012 and presently responsible for development of new varieties of specialty optical preform/fiber.



Anirban Dhar

Anirban is a member of OSA and acting as reviewer of many internationally reputed journals published by OSA, Willey Blackwell, Elsevier, IOP etc. His research interest focused on waveguide design, fabrication of specialty optical preform/fiber and optical/material characterization targeting amplifier, high power laser and sensors application.

Dear readers,

I have been associated with the technology of specialty optical preform/fiber fabrication and their optical material characterization since 2002. During this span of work, my research resulted enhancement of repeatability of solution-doping technique through precise optimization of individual process steps, identification of new host glass for rare-earth doped optical fiber, fabrication of multi mode amplifier fiber, development of pure silica core radiation hard fiber for UV-Vis-NIR zone etc. Recently I am working in two very important projects where initial result exhibit potential application in data communication and CO₂ gas sensing.

In my opinion, focus of present telecommunication research is towards the development of multi-mode specialty fibers targeting the fears of future “capacity-crunch” by implementing the principle of Mode Division Multiplexing (MDM). Already some remarkable progress has been achieved in this field by different groups through precise waveguide design and fabrication of few mode fibers but further improvements are inevitable to achieve ambitious target of enhancing internet speed by 100X. On the other hand, in terms of high power Yb-doped laser fiber which has already achieved multi-kilowatt power level, further power enhancement requires continuous research involvement to avoid “photodarkening” phenomena that result increased attenuation in the doped core of the fibre when pumped at Yb-bands (915 – 976 nm) or even in the visible wavelength. Finally, the latest hit topic related to material oriented research leading to optical telecommunication application which is still in its initial development stage is fabrication of “semiconductor core optical fiber” which attracts significant research interest due to their potential application in non-linear device for IR region.

I would like to express my sincere thanks to the Advance in Electrical Electronic Engineering journal team for their invitation to share my views about the future prospects of specialty optical fiber research. Last but not least, I am sure that the Advance in Electrical Electronic Engineering journal team will continue their excellent endeavor to publish high quality articles and reviews which will serve an important role in scientific community working in Electrical and Electronic Engineering field.