

Advanced Optical Materials and Specialty Optical Fibers for Photonics Applications

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In general, optical materials are such substances which used to manipulate the flow of electromagnetic radiation in the ultraviolet, visible or infrared spectral regions. Now-a-days optical materials play a major role in the development of specialty optical fibers for photonics applications. In this connection, the talk would focus on our R & D work of various novel composition of silica based inorganic glasses as an optical material towards the development of specialty optical fibers which serves as a heart of the optical fiber-based photonics devices and components for improvement of their lasing, optical amplification and spectral broadening properties in order to use as fiber laser, optical amplifier and broad-band optical sources. This presentation also covers the fabrication technology of such kind of optical material-based specialty optical fibers followed by their material, optical and spectroscopic characterizations along with study of their lasing, amplification and spectral broad-band properties related to the development of such kind of photonics devices.