FUTURE PLAN

Raman fiber amplifier is one of the important fiber amplifiers in the field of non-linear effects amplifiers. We provide an innovative fiber design with a staircase refractive index profile and prove that LPGs manufactured by the fiber can achieve 20 db band widths fiber by getting a high modal field overlap over the entire wavelength range.

In all of our proposed designs the inherently gain flatten is obtained by minimizing of higher signal wavelengths and simultaneously increment in gain at short signal wavelength by a redistribution of power in signal channels by detailed simulations. We have worked on long period fiber gratings (LPGs) which are important passive optical fiber devices, and will be useful in a variety of applications such as wavelength filters, dispersion compensators, sensors etc. A LPG is periodic perturbation in the direction of optical fiber length that joints the power of two co-propagating fiber modes. Conventional LPGs join light from the basic mode into clad modes that have 3 db band widths around 6 nm. The LPGs consisting of board transmission spectra and gratings having band widths of around 63 nm finds many applications in polarization based loss compensators and band selection filters. An innovative staircase fiber design for realizing broadband LPGs based on joining between LP_{01} and LP_{02} modes will be developed having band width greater than 20 db. There is an intense interest of researchers in LPGs which have broad transmission spectra (approximately 63 nm wide and band width greater than 20 db).
List of publications related to the PhD Research


5.* Asad Ali Khan, Dr. Vinod Kumar Sharma, Dr Anil Kumar, “Amplification in Optical Fibers by Rare Earth Doping”, International Journal of Engineering, Science and Mathematics Vol. 6 Issue 6, October 2017, ISSN: 2320-0294. [UGC Referred Journal]