

Applications are invited for the position of **Project Assistant (PA)** under the Science and Engineering Research Board (SERB - Govt. of India)-Sponsored Research Project entitled “**Vector Vortex Beams and their Scattering for Communication Applications**” (Reference No: SRG/2019/000857)

**Project Summary:** The purpose of this project is to implement an efficient and simple method for generating the vector vortex beams using polarization dependent spatial light modulator. Then, we use the vector vortex beams and their scattering for developing a free space communication link. We choose vector vortices for optical communication as they can enhance the amount of encoded data compared to conventional FSOC using polarization. For the generation of vector vortices I will mainly focus on using S-wave plate, designed for manipulating the spatial polarization. We will study propagation of vector vortices and their superposition states through the atmosphere to check their robustness and stability against atmospheric turbulence, which is essential for their use in communication. During our study, we also optically characterize the atmospheric quantities such as refractive index for a better understanding of the light interaction as the vector beams are very sensitive to the polarization manipulation. We will also develop an efficient optical setup for differentiating the vector vortices and their superposition for decrypting the information at the receiver station.

**Principal Investigator:** Dr. Salla Gangi Reddy (Mob: 8919870836), Department of Physics, SRM-Andhra Pradesh.

**Eligibility:** First class MSc in Physics or M.Tech (Photonics/Optics). The candidates with CSIR/UGC-NET or valid GATE qualification are preferable.

**Emoluments and Duration:** Consolidated pay of ₹20000/- per month, 2years

Interested candidates may apply by sending an email to Dr. Salla Gangi Reddy (email: [gangireddy.s@srmap.edu.in](mailto:gangireddy.s@srmap.edu.in)) with a Letter of Motivation and CV. Please mention JRF-SERB Project in the subject line of the email. Shortlisted candidates will be called for a personal interview at SRM University-Andhra Pradesh. Selected candidate should register for the full time Ph.D. Programme at SRM University, Andhra Pradesh.

No TA/DA will be provided for attending the interview.

For more information please visit [www.srmap.edu.in](http://www.srmap.edu.in) and <https://srmap.edu.in/faculty/dr-gangi-reddy-salla/>