

Research Profile and MSCA Doctoral Networks Collaboration Interest

Shreyas Srinivas Rangan

[Final-Year PhD Researcher]

Institute of Photonics, Electronics and Telecommunications
Riga Technical University, Riga, Latvia

Research Profile

My research focuses on developing high-capacity and spectrally efficient optical communication systems. My work investigates Raman-assisted Fiber Optical Parametric Amplifiers (RA-FOPA), hybrid Raman/EDFA amplification, and DWDM transmission systems using RSoft OptSim and MATLAB.

Research Vision

My long-term research goal is to develop broadband and spectrally efficient optical amplification techniques capable of supporting future ultra-high-capacity optical communication networks through advanced nonlinear fiber optics and optical system optimization.

Areas of Expertise

• Optical Fiber Communications • DWDM Systems • FOPA • Raman-Assisted Optical Amplification • Hybrid Optical Amplifiers (EDFA + Raman) • Nonlinear Fiber Optics • BER, Q-factor & OSNR Analysis • RSoft OptSim • MATLAB

Current Research

Optimization of Raman-assisted single- and dual-pump FOPA architectures, comparative amplifier evaluation, and hybrid Raman/EDFA amplification for long-reach optical access networks.

Research Interests

Optical Fiber Communications • Broadband Optical Amplification • Dense Wavelength Division Multiplexing (DWDM) Nonlinear Fiber Optics • Coherent Optical Communications • Optical Transport Networks

Potential Contribution

Optical communication system modelling, broadband optical amplifier design, DWDM optimization, nonlinear fiber optics research, performance evaluation, publications and collaborative research.

Selected Publications

Published: Performance Improvement of Long Reach Optical Access Systems using Hybrid Optical Amplifiers; Fiber Optical Parametric Amplifiers in 40 Gbps WDM Systems: Performance Limits and Optimization.

Under Review: Advanced Raman-Assisted Dual-Pump Fiber Optical Parametric Amplifier for High-Capacity DWDM Systems (temporary title); Comparative Performance Analysis of Raman-Assisted Single- and Dual-Pump Fiber Optical Parametric Amplifiers (temporary title).

Contact

Email: shreyasrangan97@gmail.com

ORCID: 0009-0007-5689-1219

Google Scholar (scan QR code)

