Vincent Akash Gomes, PhD

Research interest:

High power fiber laser and amplifier investigation

Professional Activities:

- Postdoc: 05.12.2024-present (at Ústav Fotoniky a Elektroniky, Akademie věd České Republiky)
- PhD Science Student: 28.08.2020-28.02.2025 (under AcSIR of the CSIR, India)
- Senior Project Associate: 26.08.2021-31.12.2023 (at CSIR-Central Glass and Ceramics Research Institute, Kolkata, India)
- Junior Research Fellow: 09.07.2018-31.03.2021 (at CSIR-Central Glass and Ceramics Research Institute, Kolkata, India)

Education:

- PhD in Science from CSIR-Central Glass & Ceramic Research Institute under Academy of Scientific and Innovative Research (AcSIR); (August 2020-Feburary 2025). Thesis: "High Power Thulium Fiber Laser for Medical Applications".
- M.Sc. in Physics (with specialization in solid state electronics) from St. Xavier's College (Autonomous), Kolkata; (2016-2018)
- B.Sc. in Physics (Honors) from St. Xavier's College (Autonomous), Kolkata (2013-2016)

Awards

- Best Poster Award (National Laser Symposium, 2024), for work on "Development of a 200 W Thulium Fiber Laser at 1940 nm"

Research Projects Completed

- ✓ "*Specialty Optical Fibers and Fiber-Based Components for Laser Applications*", for DRDO, India (2018–2020)
- ✓ "*CW Modulated TFL System for Soft Tissue Vaporization/Ablation*", for MeitY, India (2020–2023)

Current Ongoing Research Project

- ❖ "Development of industrial nanosecond fiber laser with high pulse energy and high average power" for Technologická agentura ČR (TA ČR) (2024- June 2026)

Publications and Conferences

Journals:

- Sajib Chowdhury, Debparna Majumder, **Vincent Akash Gomes**, Debasis Pal, Anirban Dhar, Atasi Pal, and Debashri Ghosh. "Beam quality evolution in large-mode-area

specially doped laser fiber through bend-induced effective refractive index change." Laser Physics 34, no. 4: 045104 (2024).

- **Vincent Akash Gomes**, Sajib Chowdhury, Shubhranil Maity, Debparna Majumder, Debasis Pal, and Atasi Pal. "Design of a polymer-based cladding mode stripper with a distributed temperature profile." Applied Optics 63, no. 7: 1769-1774 (2024).
- Krishnendu Maiti, Bikram Haldar, Atasi Pal, **Vincent Akash Gomes**, and Dilip Kumar Pal. "Ex vivo vaporization performance study of human prostate tissue using in-house designed thulium fiber laser." Annals of Medical Science & Research 2, no. 1: 21-25 (2023).

Applied Indian Patent:

- Atasi Pal, **Vincent Akash Gomes**, "Water-cooled all-fiber continuous wave and modulated thulium fiber laser at operating wavelength 2 μm" (App no.: 202111053720) (Filled in: 2021)

Conferences:

- **Vincent Akash Gomes**, Shubhranil Maity, Abdul Malek Mallick, and Atasi Pal. "Application of a quasi-continuous wave thulium fiber laser in human urinary stone fragmentation." In Eighth International Workshop on Specialty Optical Fibers and Their Applications (WSOF 2025), vol. 13522, pp. 278-281. SPIE, (2025).
- **Vincent Akash Gomes**, and Atasi Pal. "Development of a 200 WThulium Fiber Laser at 1940 nm." In Proceedings of 32nd DAE-BRNS National Laser Symposium CP, vol. 8, p. 08 (2024).
- **Vincent Akash Gomes,** Sourav Das Chowdhury, Sajib Chowdhury, Shubhranil Maity, Atasi Pal, "Relaxation Oscillation Suppression for a QCW TDFL Using Optical Feedback Amplifier Design" In Conference on Optics, Photonics & Quantum Optics, (2022)
- Sajib Chowdhury, Shuvamoy Bindai, **Vincent Akash Gomes**, Sourav Das Chowdhury, and Mrinmay Pal. "500 W Ytterbium Doped Monolithic Fiber Laser at 1 μm using Non-Wavelength Stabilized Laser Diodes." In 2019 Workshop on Recent Advances in Photonics (WRAP), pp. 1-3. IEEE, (2019).
- Debparna Majumder, Sajib Chowdhury, **Vincent Akash Gomes**, and Atasi Pal. "Light Propagation Characteristics of a Tapered Double Clad LMA Fiber with Near Diffraction Limited Output." In 2019 Workshop on Recent Advances in Photonics (WRAP), pp. 1-3. IEEE, (2019).
- **Vincent Akash Gomes** and Atasi Pal, "Methods for Slope Efficiency Optimization in an All-Fiber Thulium Doped Laser" in 2023 at International Conference on Optics, Photonics and Quantum Information (OPTIQ 2023), December 2023