



**CHRIST**  
(DEEMED TO BE UNIVERSITY)  
BANGALORE · INDIA

## Notice for the PhD Viva Voce Examination

Mr S Sriram, Registration Number: 1942094, PhD Scholar at the Department of Physics and Electronics, School of Sciences, CHRIST (Deemed to be University) will defend his PhD thesis at the public viva-voce examination on Wednesday, 25 June 2025 at 2.30 pm in Room No. 044, Ground Floor, R & D Block, CHRIST (Deemed to be University), Bengaluru - 560029, Karnataka, India.

- Title of the Thesis** : **A Wide Field Imager and Multi-Object Spectrograph for a Next Generation UV Mission**
- Discipline** : **Physics**
- External Examiner - I** : **Dr Shashikiran Ganesh**  
Professor  
Physical Research Laboratory  
Udaipur Solar Observatory, Navarangpura  
Ahmedabad - 380009, Gujarat
- External Examiner - II** : **Dr Ravinder K Banyal**  
Professor  
Indian Institute of Astrophysics  
Koramangala, 2nd Block  
Bengaluru - 560034, Karnataka
- Supervisor** : **Dr Vineeth V**  
Assistant Professor  
Department of Physics and Electronics  
School of Sciences  
CHRIST (Deemed to be University)  
Bengaluru - 560029, Karnataka
- Co-Supervisor** : **Dr Annapurni Subramaniam**  
Professor  
Indian Institute of Astrophysics  
Koramangala  
Bengaluru - 560034, Karnataka

The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts and research scholars of all the branches of research are cordially invited to attend this open viva-voce examination.

**Place:** Bengaluru  
**Date:** 19 June 2025

  
**Registrar (Academics)**

## ABSTRACT

The ultraviolet (UV) range (912 Å–3200 Å) is crucial for studying hot plasma in astrophysical environments, from stars to black holes and the intergalactic medium. While past missions like HST and GALEX highlighted the significance of UV observations, upcoming telescopes such as JWST, Euclid, and Roman focus on infrared wavelengths. A dedicated UV mission is essential to complement these efforts. Building on India's successful ASTROSAT mission, the proposed UV space mission aims to provide wide-field imaging (FoV > 0.25 sq. deg), high angular resolution (<0.2" FWHM), multi-band coverage (UV, u, g), and deep sensitivity (mAB > 26 mag). It also incorporates multi-object spectroscopy and high-precision photometry.

This research evaluates mission concepts, conducts trade-off studies, and develops a Multi-Object Spectrograph (MOS) using a Digital Micromirror Device (DMD). The spectrograph's design, laboratory validation, and ground-based calibration confirm its feasibility for future space deployment.

**Keywords:** *INSIST, Future UV Mission, DMD Spectrograph, TMA Telescope*

### Publications:

1. **S. Sriram**, Vineeth Valsan, A. Subramaniam, C. Vishnu Unni, G. Maheswar, Totan Chand; Indian spectroscopic and imagingspace telescope (INSIST): An optics design trade-off study; 2023; Journal of Astrophysics and Astronomy; 44:55; 2
2. **S. Sriram**, Vineeth Valsan, A. Hoodati, A. Subramaniam, G. Maheswar; DMD Based Multi-Object Spectrograph for Indian Spectroscopic and Imaging Space Telescope: INSIST; 2023; Journal of Astronomical Instrumentation; 12; 04