Two Day Online Workshop on

HYPERSPECTRAL REMOTE SENSING AND ITS APPLICATIONS

16th & 17th September, 2022

Venue: Virtual Mode, Sathyabama Institute of Science & Technology

Sponsored by

IIT Tirupati Navavishkār I-Hub Foundation

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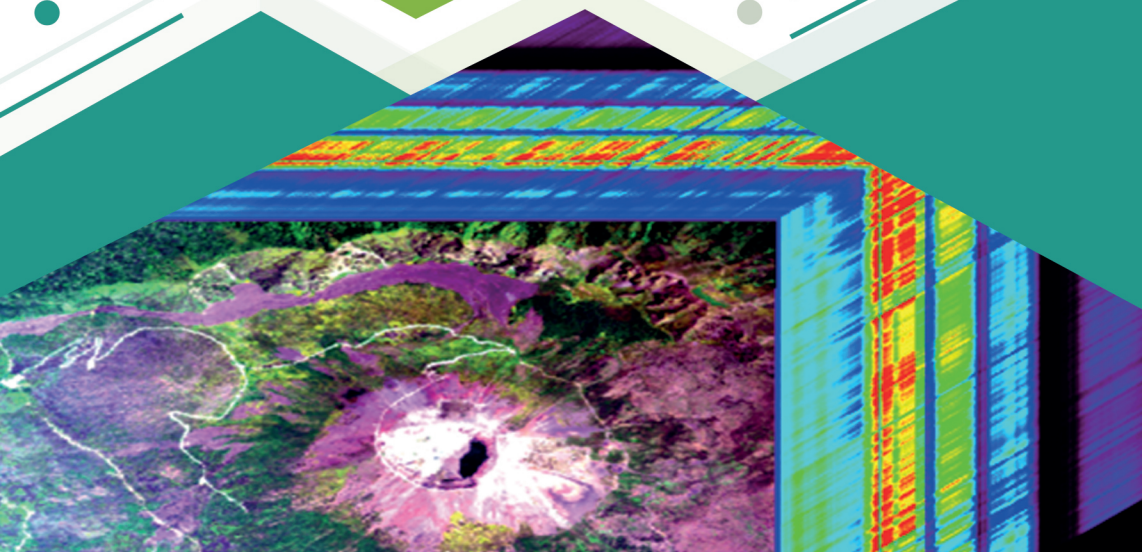
भारतीय प्रौद्योगिकी संस्थान तिरुपति IIT TIRUPATI

IIT Tirupati Navavishkar I-Hub Foundation (IITTNiF)
Technology Innovation Hub in Positioning and Precision Technologies
(https://iittnif.com/initiatives/skill-development)

Organized by

CENTRE FOR REMOTE SENSING & GEOINFORMATICS
Col. Dr. Jeppiaar Research Park
SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY
Jeppiaar Nagar, Chennai - 600 119



About Indian Institute of Technology Tirupati

Indian Institute of Technology Tirupati (IIT Tirupati) is incorporated under the Institutes of Technology Act, 1961 and has its campus at Yerpedu-Venkatagiri Road, Yerpedu Post, Tirupati District, Andhra Pradesh-517619. It is the first among the 3rd phase of Indian Institutes of Technology, announced in 2014, to have its foundation stone laid in March 2015. IIT Tirupati started functioning with the support of its mentoring institute, IIT Madras, from the academic year of 2015-16. IIT Tirupati is currently offering the programmes – B.Tech, M.Tech, M.Sc, MPP, M.S (Research) and Ph.D. IIT Tirupati has nine departments – Civil & Environmental Engineering, Computer Science \& Engineering, Electrical Engineering, Mechanical Engineering, Chemical Engineering, Mathematics \& Statistics, Physics, Chemistry and Humanities \& Social Science. The pedagogy is aimed at nurturing innovation, creativity, quality, teamwork, communication skills, ethics, and societal interaction.

About Technology Innovation Hub at IIT Tirupati

Positioning and Precision Technologies (PPTs) are indispensable tools for monitoring, integrating, and analyzing spatially and temporally distributed resources to aid in effective decision-making across multiple domains. These technologies include remote sensing (non-invasive), Geographical Information Systems (GIS) and Global Positioning Systems (GPS). The Technology Innovation Hub (TIH) primarily focus on Public Private Partnership (PPP) model to generate revenue through: (i) Research and development sponsorship from industries, government and start-ups in form of innovative products and services in PPT; (ii) linkage with industries, accelerators and Venture Capital to create funding ecosystem; (iii) training and consulting; (iv) standards development and policy creation for rapid adaptation of PPT across various stakeholders; and (iv) databank creation across strategic areas of PPT. IIT Tirupati Navavishkar I-Hub Foundation (IITTNiF), a not-for-profit Section-8 company, is set up to host the Technology Innovation Hub (TIH) in Positioning and Precision Technologies (PPT). For more details visit: https://iittnif.com

Sathyabama Institute of Science and Technology

Sathyabama is a prestigious institution which excels in the fields of Engineering, Science and Technology for more than three successful decades. It offers multi-disciplinary academic programmes in various fields of Engineering, Science, Technology, law, Dental Science, Pharmacy, Nursing, Management, Arts and Science and Allied Health Sciences. It is established under Sec.3 of UGC Act, 1956 and is been Accredited with 'A' Grade by the National Accreditation and Assessment council. Sathyabama has been ranked in 40th position by the NIRF among the Universities in India for the year 2021 and ranked one among the top 50 Universities for six consecutive years. Sathyabama is ranked among the Top 5 Institutions in the Country for Innovation by ATAL ranking for Innovation Achievements. TIMES Higher Education and QS has ranked Sathyabama among the top Institutions worldwide. It is a research intensive University with world class laboratories and research facilities and has undertaken various sponsored and collaborative R&D projects funded by National and International Organisations. Sathyabama has written a special page in the history of space research in June 2016 with the launch of "SATHYABAMASAT" in association with ISRO. Visit us on : https://www.sathyabama.ac.in.

Centre for Remote Sensing and Geoinformatics

Centre for Remote Sensing and Geoinformatics (CRSG) is the first research centre managed by Sathyabama Institute of Science and Technology to focus on Advanced Remote Sensing and GIS applications in interdisciplinary aspect. Centre has been established in 2004 as a joint initiative of ISRO and Sathyabama Institute to fulfill the goal of establishing advanced centers in frontier areas of Science and Technology. To its credit CRSG was considered as a nodal centre for conducting Geospatial training programme supported by ISRO-IIRS, and various training programs supported by Department of Science and Technology (DST)-NRDMS program, Ministry of Earth Sciences (MoES), Science and Engineering Research Board (SERB) and ISRO-Respond. Centre has successfully completed several research projects funded by agencies and research organizations such as, DST, Bharatiya Nabikiya Vidyut Nigam Ltd. (DAE-BHAVINI), National Institute of Wind Energy (NIWE), SERB, ISRO, and MoES.

About the Workshop

Hyperspectral Remote Sensing deals with measurements in a large number of narrow spectral bands over a contiguous spectral range. Because of its ability to detect narrow absorption features hyperspectral data are related to specific vegetation physico-chemical characteristics, soil physical and chemical properties, mineral composition and snow characteristics, mapping tree species, recognizing invasive plants and identifying key geologic features. However, because of presence of a large number of bands, hyperspectral data needs different analysis approach including feature reduction, feature selection, removal of noise, detection of absorption features, advance classification techniques. This course will make the participants aware about hyperspectral remote sensing, hyperspectral data processing and its applications. This workshop will have eight session. This workshop will cover the basics of hyperspectral remote sensing, ground spectro-radiometer and processing techniques: and its various applications.

This workshop targets the young minds to excel in Hyperspectral Remote Sensing and its various applications. Lecture sessions will be handled by eminent speakers.

Lecture Sessions

- Hyperspectral Remote Sensing an Overview, Sensors and Satellite data, Data Processing
- Applications of Hyperspectral Remote Sensing for Urban Studies, Water Resources Studies, Agriculture and Soil Studies, Environmental Studies.

Expected Participants

The workshop is designed for Scientists, faculty members, Research scholars and students from academic institutions, Industrialists, officials from Government/ Public sector organizations.

Advisory Committee

Patrons

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Chancellor
Dr. Marie Johnson
President
Dr. T. Sasipraba
Vice Chancellor, SIST, Chennai

Organizing Committee

Organising Secretary

Dr. B. Sheela Rani
Director Research,
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Registration Fee

Students
300/-

Research Scholar / Faculty
500/-

Registration Link

https://iittnif.com/registration

EVENT SCHEDULE

DAY 1 - Sep 16, 2022		
Time (hrs)	**Session**	**Details**
10:00-10:30	**Inaugural Session**	Overview, Remarks by the Guest of Honour, About TIH
10:30 - 11:45	**Session 1**	*Hyperspectral Remote Sensing:* **An overview** **Dr. Rabi Narayan Sahoo** Indian Agricultural Research Institute, New Delhi *Email: rabi.sahoo@icar.gov.in*
11:45 - 13:00	**Session 2**	*Hyperspectral Remote Sensing* **Data processing** **Mr. Vinay Kumar** Indian Institute of Remote Sensing, ISRO, Dehradun *Email: vinaykumar@iirs.gov.in*
Lunch Break		
15:00 - 16:15	**Session 3**	*Hyperspectral Remote Sensing* **Sensors and Satellite data** **Prof. Giovanni Laneve** SIA (Scuola di Ingegneria Aerospaziale) Earth Observation Satellite Images Applications Lab (EOSIAL), Italy *Email: giovanni.laneve@uniroma1.it*
DAY 2 - Sep 17, 2022		
10:00 - 11:15	**Session 4**	*Hyper spectral Remote Sensing for* **Urban Studies** **Ms. Asfa Siddiqui** Urban & Regional Studies Department Indian Institute of Remote Sensing, ISRO, Dehradun *Email: asfa@iirs.gov.in*
11:15 - 12:30	**Session 5**	*Hyper spectral Remote Sensing for* ***Water Resources Studies*** **Dr. Vaibhav Garg** Water Resources Department Indian Institute of Remote Sensing, ISRO, Dehradun *Email: vaibhav@iirs.gov.in*
Lunch Break		
13:30 - 14:45	**Session 6**	*Hyper spectral Remote Sensing for* **Agriculture and Soil Studies** **Mr. Justin George. K** Scientist/ Engineer - SD, Agriculture and Soils Department Indian Institute of Remote Sensing, ISRO, Dehradun *Email: justinagri@gmail.com*
14:45 - 16:00	**Session 7**	*Hyper spectral Remote Sensing for* **Environmental Studies** **Prof. M. Anji Reddy** Professor of Environment, Director, R&D, JNTU, Hyderabad *Email: mareddyanjireddi@gmail.com*
16:00 - 16:30	**Valedictory**	Feedback