Advanced Hyperspectral Remote Sensing Techniques for Mineral Exploration

Overview

Ministry of Human Resource Development
Government of India

Hyperspectral remote sensing is one of the newly developed space technologies used for identification of the different earth resources using its spectral signatures mainly in the visible and infrared portion of the electromagnetic spectrum. This technique is being used in the developed countries using the aerial vehicle but after the launch of the first hyperspectral sensor "Hyperion" which is onboard on EO-1 spacecraft by NASA (National Aeronautics and Space Administration). This technology and the data so generated are being used worldwide for different purposes. After the huge success of the Hyperion mission, this technology was also implemented in the other planetary mission such as Moon, Mars and Saturn by ISRO (Indian Space Research Organization), NASA (National Aeronautics and Space Administration) and ESA (European Space Agency). The application of hyperspectral sensor in the other planetary bodies increased the demand of the competent human resources for processing huge data sent by the sensors. Currently, in India, we have limited numbers of competency to make use the data of this technique. So there is a need to encourage young researchers and academicians to get acquainted with the technology for better utilization of such hyperspectral remote sensing data available in India and abroad.

This workshop aims to provide a hands-on training to the scientist/researcher/academicians to utilizing the potential of hyperspectral data as a tool to aid detailed mineral mapping for different mineral deposits. The participants of workshop will learn not only the cutting edge technology its processing steps and the exposure with the hardware's and software's being deployed in the specialization of hyperspectral remote

sensing. This technical workshop will enable the scientist/researcher/academicians and private companies to improve the mineral search techniques.

OBJECTIVES:

The primary objectives of this course are as follows:

1. To provide international and national status of Hyperspectral remote sensing technique and its application.
2. To provide hands-on training on the hardware and software deployed for the Hyperspectral data processing.
3. To understand the different image classification methods of the technique for different applications including mineral exploration.
4. To understand the Hyperspectral image classification techniques.
5. To build capacity and confidence amongst the participants in terms of hyperspectral data handling, image processing and interpretation, and uses of the data.

Registration	• **Number of participants for the course will be limited to 50.** • **Registration fees include course material.** • **Accommodations are available at nearby hotels and will be arranged on first come first serve basis upon payment.**
You Should Attend If…	• you are an executives, engineers and researchers from Geology, Civil Engineering, Mining engineering belonging to governmental institutes, consultancy firms, research institutes, and industries • you are a students at all levels (B.Tech/M.Sc./M.Tech/Ph.D.) • faculty from academic institutions and technical institutions.
Fees	The participation fees for taking the course is as follows: **Participants from abroad : US $500** **Industry/ Research Organizations: 10000 INR** **Academic Institutions: 3000 INR** **Students: 1500 INR** The above fee include all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, free internet facility during lecture and practical session. The participants will be providedaccommodation on payment basis if available.

The Faculty

	**Dr. S. Rajendran** is currently working in Department of Earth Sciences, Sultan Qaboos University, Al-Khod, 123 Muscat, Oman. He is using remote sensing technique since 1991 and has experience in multispectral and hyperspectral data. He has organized a seminar and several trainings and carried out several research projects in the field of hyperspectral remote sensing with the support of NRDMS-DST, NNRMS-ISRO, MOES, CSIR and UGC organizations of Govt. of India. He has conducted hands on training in hyperspectral remote sensing to employees of engineers, scientists of government and non-government organizations, universities and colleges, and research scholars. He has published several research papers in the national and international journals in his field of research interests.
	**Dr. Prabhat Diwan** is Associate Professor and Head, Department of Applied Geology, National Institute of Technology Raipur, India. His research interest includes Structural Geology, Economic Geology, Remote Sensing & GIS.
	**Dr. N. Vishwakarma** is an Assistant Professor, Applied Geology Department, National Institute of Technology Raipur, India. His research interest includes Mineralogy, Petrology & Geochemistry.
	**Dr. D. C. Jhariya** is an Assistant Professor in the Department of Applied Geology, National Institute of Technology Raipur, India. His research interest includes Hydrogeology, Environmental Geology, and Remote Sensing & GIS.
	**Dr. Himanshu Govil** is an Assistant Professor, Applied Geology Department, National Institute of Technology Raipur, India. His research interest includes Hyperspectral remote sensing application in mineral exploration, image classification techniques, Environmental impact assessment.

Period
1st to 8th July 2016

Venue:
NIT Raipur

Course Co-ordinator

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http://www.nitrr.ac.in

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Registration Process:

Apply Online

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