



One Week Training Program
On
Uses of Sophisticated Instruments in Earth Sciences
Under
Synergistic Training program Utilizing the Scientific & Technological Infrastructure
An initiative of Department of Science & Technology (DST), Govt. Of India
Organized by
Department of Applied Geology, IIT (ISM) Dhanbad, India-826004



One Week Training Program on “Uses of Sophisticated Instruments in Earth Sciences” (25th March – 31st March, 2022)

The Department of Science and Technology, Government of India, has given the responsibility to IIT (ISM) Dhanbad to build human resources and its knowledge capacity using open access science and technology infrastructure through the scheme "*Synergistic Training Program Utilizing the Scientific and Technological Infrastructure (STUTI)*". (Office Order No. DST/RND/STUTI/2021/13(c) DT: 9.2.2022). In this regard, the Department of Applied Geology, IIT (ISM) Dhanbad, organized a one-week training program on "*Uses of Sophisticated Instruments in Earth Sciences*" from 25th March to 31st March, 2022 at IIT (ISM) Dhanbad.

This training program was coordinated by Prof. Ajoy Kumar Bhaumik, Associate Professor, Department of Applied Geology, IIT (ISM) Dhanbad. This program includes thirty participants (Faculty/Research Scholar) from various universities/colleges in Jharkhand and Bihar, with no more than three from the same university/college.

Highlights of the Day-1 (Dated: 25th March, 2022)

The first day of the training program began with a brief introduction to the program's purpose and significance. The introduction piqued the participants' interest in science and engineering. The participants were then given a welcome kit including a bag, notepad, pen, pencil, eraser, sharpener, program schedule etc.

Following that, two consecutive lectures were scheduled, with a relatively short tea break in between. The introduction and application of the Fourier-Transform Infrared Spectroscopy (FTIR) technique were the focus of these lectures. The first lecture (from 10:00 AM to 11:15 AM) was delivered by Prof. Soumit Chatterjee, Department of Chemistry and Chemical Biology, IIT (ISM) Dhanbad and the second lecture (from 11:30 AM to 12:45 PM) was delivered by Prof. Sumanta Kumar Sahu, Department of Chemistry and Chemical Biology, IIT (ISM) Dhanbad.

Next, after the lunch break, a practical demonstration (from 2:00 PM to 5:00 PM) of the FTIR spectrophotometer was provided by Prof. Sumanta Kumar Sahu, Department of Chemistry and Chemical Biology, IIT (ISM) Dhanbad.

Highlights of the Day-2 (Dated: 26th March, 2022)

On the second day, two lectures were given based on the X-Ray Fluorescence (XRF) analysis. The first lecture (from 10:00 AM to 11:15 AM) was delivered by Prof. M. K. Panigrahi, Department of Geology and Geophysics, IIT Kharagpur and the second lecture (from 11:30 AM to 12:45 PM) was delivered by Prof. R. Anand, Department of Applied Geology, IIT (ISM) Dhanbad.

Next, after the lunch break, a practical demonstration (from 2:00 PM to 5:00 PM) on XRF analysis was provided by Prof. Pranab Das.



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Highlights of the Day-3 (Dated: 27th March, 2022)

On the third day, one lecture was conducted based on the CHNSO analyzer. This lecture (from 10:00 AM to 11:15 AM) was delivered by Prof. Arun Kumar Samanta, Department of Chemical Engineering, IIT (ISM) Dhanbad and second lecture (from 11:30 AM to 12:45 PM) was delivered by Prof. A. K. Bhaumik Department of Applied Geology, IIT (ISM) Dhanbad.

Following the lunch break, a practical demonstration (from 11:30 AM to 12:45 PM) on the CHNSO analyzer was given by Prof. H. P. Nayek.

Highlights of the Day-4 (Dated: 28th March, 2022)

Similarly, two lectures were given on geological sample preparation and Inductively Coupled Plasma on the fourth day (ICP). The first lecture (from 10:00 AM to 11:15 AM) was delivered by Prof. R. Anand, Department of Applied Geology, IIT (ISM) Dhanbad and the second lecture (from 11:30 AM to 12:45 PM) was delivered by Prof. Alik S Majumdar, Department of Applied Geology, IIT (ISM) Dhanbad.

Next, after the lunch break, a practical demonstration (from 2:00 PM to 5:00 PM) on the ICP instrument was provided by Prof. R. Anand and Prof. Alik S majumdar.

Highlights of the Day-5 (Dated: 29th March, 2022)

Similarly, on the fifth day, two lectures were conducted based on the X-Ray Diffractometer (XRD) analysis. The first lecture (from 10:00 AM to 11:15 AM) was delivered by Prof. P. M. Sarun, Department of Physics, IIT (ISM) Dhanbad and the second lecture (from 11:30 AM to 12:45 PM) was delivered by Dr. Sudip Maity, CIMFR Digwadi, Dhanbad.

Next, after the lunch break, a practical demonstration (from 2:00 PM to 5:00 PM) on XRD analysis was provided by Prof. P. M. Sarun, Department of Physics, IIT (ISM) Dhanbad.

Highlights of the Day-6 (Dated: 30th March, 2022)

Similarly, on the sixth day, two lectures based on NMR spectroscopy were given. The first lecture (from 10:00 AM to 11:15 AM) was delivered by Prof. Soumit Chatterjee, Department of Chemistry and Chemical Biology, IIT (ISM) Dhanbad and the second lecture (from 11:30 AM to 12:45 PM) was delivered by Prof. Saumitra Maity, Department of Chemistry and Chemical Biology, IIT (ISM) Dhanbad.

Next, after the lunch break, a practical demonstration (from 2:00 PM to 5:00 PM) on the NMR instrument was provided by Prof. Swapan De, Department of Chemistry and Chemical Biology, IIT (ISM) Dhanbad.



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Highlights of the Day-7 (Dated: 31st March, 2022)

Similarly, two lectures based on the Scanning Electron Microscope (SEM) were given on the seventh day (the last day of the training program). The first lecture (from 10:00 AM to 11:15 AM) was delivered by Prof. G. C. Nayak, Department of Chemistry and Chemical Biology, IIT (ISM) Dhanbad and the second lecture (from 11:30 AM to 12:45 PM) was delivered by Prof. A. K. Bhaumik, Department of Applied Geology, IIT (ISM) Dhanbad.

Next, after the lunch break, a practical demonstration (from 2:00 PM to 5:00 PM) on the SEM instrument was provided by Prof. A. K. Bhaumik, Department of Applied Geology, IIT (ISM) Dhanbad.

Following that, the certificate distribution took place, followed by a closing speech. Throughout the training programme, a formal discussion environment was established for the exchange of scientific and technological knowledge.
