



One-Week Hands-On Training Program

On

“Advanced Instrumental Techniques in Water and Wastewater Analysis (AITWWA’ 22)”

Under

Synergistic Training program Utilizing the Scientific & Technological Infrastructure

An initiative of Department of Science & Technology (DST), Govt. Of India

Organized by

Department of Environmental Sciences, Central University of Jharkhand, Ranchi, Jharkhand

In association with

Indian Institute of Technology (Indian School of Mines) Dhanbad



One-Week Hands-On Training Program on “Advanced Instrumental Techniques in Water and Wastewater Analysis (AITWWA’ 22)” (27th June – 03rd July, 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)*". Thus, under the DST-STUTI programme of IIT (ISM) Dhanbad, a one-week hands-on training program on "*Advanced Instrumental Techniques in Water and Wastewater Analysis (AITWWA’ 22)*" was organized from 27th June to 03rd July, 2022 at Department of Environmental Sciences, Central University of Jharkhand, Ranchi, Jharkhand.

This training program was coordinated by Prof. Manoj Kumar, Department of Environmental Sciences, Central University of Jharkhand and Prof. Alok Sinha, Department of Environmental Science and Engineering, IIT (ISM) Dhanbad. This program includes thirty participants (Faculty/Research Scholar) from various universities/colleges in India.

Highlights of the Day-1 (Dated: 27th June, 2022)

The first day of the training program began with a brief introduction to the program's purpose and significance. The introduction energized the participants' interest in science and engineering. Next, the training program was inaugurated. The participants were then given a welcome kit that included a note pad, a power kit (pen, pencil, eraser, and sharpener), and a program pamphlet.

Following that, two consecutive lectures were scheduled, with a relatively short tea break in between. Water quality parameters and wastewater characteristics were the basis for these two lectures. The first lecture (from 10:00 AM to 11:30 AM) was delivered by Prof. Alok Sinha, and the second lecture (from 11:45 AM to 01:15 PM) was delivered by Prof. S. K. Gupta.

Next, after the lunch break, a laboratory demonstration (from 02:15 PM to 05:15 PM) on water quality analysis was provided by Prof. Alok Sinha and Prof. S. K. Gupta.

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R. K. Sinha

02/9/22



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Highlights of the Day-2 (Dated: 28th June, 2022)

On the second day, two lectures were given based on water quality analysis and wastewater analysis. The first lecture (from 10:00 AM to 11:30 AM) was delivered by Prof. R. K. Dey, and the second lecture (from 11:45 AM to 01:15 PM) was delivered by Dr. Bhaskar Singh.

Next, after the lunch break, a laboratory demonstration (from 02:15 PM to 05:15 PM) on wastewater analysis was provided by Prof. R. K. Dey and Dr. Bhaskar Singh.

Highlights of the Day-3 (Dated: 29th June, 2022)

Similarly, on the third day, two lectures were conducted. The first lecture (from 10:00 AM to 11:30 AM) was based on the analysis of contaminants by using UV-Vis Spectrometer and was delivered by Dr. Kuldeep Bauddh. The second lecture (from 11:45 AM to 01:15 PM) was based on the concepts of the UV-Vis spectrometer and was delivered by Dr. Sushil Kumar Shukla.

Following the lunch break, a laboratory demonstration (from 02:15 PM to 05:15 PM) on the analysis of biochemical components in the plants by using UV-Vis spectrometer was provided by Dr. Kuldeep Bauddh and Dr. Sushil Kumar Shukla.

Highlights of the Day-4 (Dated: 30th June, 2022)

On the fourth day, two lectures were given. The first lecture (from 10:00 AM to 11:30 AM) was focused on the basic principles of flame photometer and was delivered by Dr. Nirmali Bordoloi. The second lecture (from 11:45 AM to 01:15 PM) was focused on analysis by flame photometer and was delivered by Dr. Ramesh Oraon.

Next, after the lunch break, a laboratory demonstration (from 02:15 PM to 05:15 PM) on the analysis by flame photometer was provided by Dr. Nirmali Bordoloi and Dr. Rmesh Oraon.

Highlights of the Day-5 (Dated: 01st July, 2022)

Similarly, on the fifth day, two lectures were conducted. The polyhouse mist chamber was the prime focus of the first lecture (from 10:00 AM to 11:30 AM) and was delivered by Dr. Purabi Saikia. The

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trinocular phase contrast and dark field microscope were the prime focus of the second lecture (from 11:45 AM to 01:15 PM) and was delivered by Dr. Bhaskar Singh.

Next, after the lunch break, a Laboratory demonstration (from 02:15 PM to 05:15 PM) on polyhouse mist chamber was provided by Dr. Purabi Saikia and Dr. Bhaskar Singh.

Highlights of the Day-6 (Dated: 02nd July, 2022)

On the sixth day, two lectures were given by Dr. Nirmali Bordoloi. The first lecture (from 10:00 AM to 11:30 AM) was based on the concepts of gas chromatography, and the second lecture (from 11:45 AM to 01:15 PM) was based on the analysis by gas chromatography.

Next, after the lunch break, a laboratory demonstration (from 02:15 PM to 05:15 PM) on the analysis of organic contaminants by gas chromatography was provided by Dr. Nirmali Bordoloi.

Highlights of the Day-7 (Dated: 03rd July, 2022)

Similarly, on the seventh day, two lectures (the first lecture was from 10:00 AM to 11:30 AM and the second lecture was from 11:45 AM to 01:15 PM) were conducted based on heavy metal analysis by atomic absorption spectrometer and were delivered by Dr. Ramesh Oraon.

Next, after the lunch break, a laboratory demonstration (from 02:15 PM to 05:15 PM) on AAS analysis was provided by Dr. Ramesh Oraon.

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.

Prof. Sagar Pal
Coordinator (DST-STUTI)

Prof. Ravi Kumar Gangwar
Co-Coordinator (DST-STUTI)

Prof. Alok Sinha
Program Coordinator