

Report on
The One-Week Training Program on
“Opportunities for Research and Innovation Using
the DST-Sponsored Facilities of Gauhati University”
Under the DST-STRUTI Project

Organized by
Department of Instrumentation and USIC
Gauhati University

In association with
Shivaji University, Kolhapur Maharashtra

From 24th to 30th Nov, 2022

Introduction and Objective:

A one-week long training program under the DST-STUTI project was organized by the Department of Instrumentation and USIC, Gauhati University in association with Shivaji University, Kolhapur, Maharashtra, from 24th to 30th Nov, 2022. The theme of the training program was “Opportunities for Research and Innovation using the DST-Sponsored Facilities of Gauhati University” and it covered all the aspects of the functional DST-sponsored facilities of Gauhati University – the basic working principle, instrumentation and applications along with a hands-on session.

The primary objective of the DST-STUTI project is to create a trained pool of manpower who can independently operate analytical instruments. As a first step, young faculty members and research scholars from various institutes from all over India were introduced to and familiarized with the sophisticated analytical instrument facilities present in the University which are sponsored by DST. Nearly 200 applications were obtained for this workshop, but a large number of the participants from other states could not attend due to the problem of connectivity and arrangement of transportation.

The **organizing committee** for the training program was formed as shown below.

Chairperson: Prof. Utpal Sarma, Head of the Department of Instrumentation and USIC

Coordinator: Dr. Madhurjya Modhur Borgohain, Associate Prof., Department of Instrumentation and USIC

Program Coordinator: Nairit Barkataki, Assistant Prof., Department of Instrumentation and USIC

Members: Dr. Sanjib Karmakar, Dr. Santanu Bardoloi, Dipak Das, Dr. Debashis Saikia, Dr. Pranjal Borah

DST-Sponsored Facilities of Gauhati University:

Gauhati University has the following functional DST-sponsored analytical facilities:

1. PANalytical Empyerean Powder XRD (SAIF, Guwahati)
2. Bruker Smart Apex II X-ray Single Crystal Diffractometer (SCXRD) (SAIF, Guwahati)
3. PANalytical Zetium X-ray Fluorescence Spectrometer (XRF) (SAIF, Guwahati)
4. Thermogravimetric Analyser (Mettler Toledo) (SAIF, Guwahati)
5. Differential scanning calorimeter (Mettler Toledo) (SAIF, Guwahati)
6. Rigaku Ultima-IV Powder X-ray Diffractometer with SAXS attachment (Dept. Of Chemistry, G.U.)
7. High Resolution Mass Spectrometer (Waters, Xevo G2-XS QTOF), (Dept. of Chemistry, Gauhati University)
8. Shimadzu UV VIS Spectrophotometer (UV 1900i) (Dept. Of Physics, Gauhati University)
9. Nuclear Magnetic Resonance Spectrometer (yet to arrive at the Dept. Of Chemistry, Gauhati University)

All these facilities were included as a part of the training program. Lectures and Hands-on sessions were organized for all these facilities. Lecture sessions covered the basic theory and working principle, instrumentation and the application part of each instrument.

Apart from these analytical instruments, Gauhati University has a few more DST-funded facilities like Bruker 300 MHz NMR Spectrometer, Hitachi UV-Vis-NIR spectrometer and Surface Area Analyzer etc. Since these facilities are not functioning, they were kept out of scope of this training program.

The list of participants is as followed:

Although participants from various other institutes also showed interest in the training program, many of the participants, especially young faculty members could not attend it because of the busy academic schedule. Most of the participants were research scholars.

Serial No.	Name	Institute	Designation
1	Agam Kumar	Pondicherry University	Research Scholar
2	Akshay Laxman Chavan	Nanasaheb Mahadik College of Engineering	Research Scholar
3	Anjan Sharma	Tezpur University	Research Scholar
4	Apoorva Singh	Vivekananda Global University	Research Scholar
5	Apurba Das	Assam Agricultural University	Research Scholar
6	Arpon Biswas	CSIR-Central Drug Research Institute	Research Scholar
7	Bonmayuri Das	Pandu College	Research Scholar
8	Fung Swrangshee Daimari	Bodoland University	Research Scholar
9	Gaurav Saikia	Assam Science and Technology University	Research Scholar
10	Hammad Zia	Aligarh Muslim University	Research Scholar
11	Hari Prosad Roy	Tezpur University	Research Scholar
12	Hirasmita Das	Bodoland University	Research Scholar
13	Jahnawi Sarma	Assam Science and Technology University	Research Scholar
14	Laishram Rashi Devi	Manipur University	Research Scholar
15	Maibam Franco Singh	Manipur University	Research Scholar
16	Neha Kashyap	Guru Jambheshwar University Sciences and Technology	Research Scholar
17	Pooja Rawat	Vivekananda Global University	Research Scholar
18	Pradyut Nandan Sarma	Assam Science and Technology University	Research Scholar
19	Rahul Gogoi	Assam Agricultural University	Research Scholar
20	Rajib Basumatary	Bodoland University	Research Scholar

21	Riya Sharma	Assam Science and Technology University	Research Scholar
22	Sagar Sudhakar Ingole	Raje Ramrao Mahavidyalaya	Research Scholar
23	Salam Anilkumar Singh	Manipur University	Research Scholar
24	Saurav Bhattacharjee	Kamrup Polytechnic	Research Scholar
25	Selvarasu Chinnaiyan	Bharathiar University	Research Scholar
26	Sunny Ramchandra Gurav	Shivaji University	Research Scholar
27	Anindita Deka	Gauhati University	Research Scholar
28	Atrayee Banaspati	Gauhati University	Research Scholar
29	Barasha Rani Saharia	Gauhati University	Research Scholar
30	Indranee Changmai	Gauhati University	Research Scholar
31	Jakia Parbin Sultana	Gauhati University	Research Scholar
32	Monalisha Das	Gauhati University	Research Scholar
33	Nabajyoti Deka	Gauhati University	Research Scholar
34	Navneet Hazarika	Gauhati University	Research Scholar
35	Pallab Pathak	Gauhati University	Research Scholar
36	Rimlee Saikia	Gauhati University	Research Scholar
37	Sristi Majumdar	Gauhati University	Research Scholar
38	Sujata Brahma	Gauhati University	Research Scholar
39	Sumi Das	Gauhati University	Research Scholar
40	Tapan Talukdar	Gauhati University	Research Scholar
41	Tonmoi Hazarika	Gauhati University	Research Scholar
42	Nilpavan Sarma	Gauhati University	Research Scholar

Schedule of the Training Program: The Schedule of the Training Program was designed in such a way that the participants can have a lecture session as well as a brief hands-on session on all the functional DST-sponsored facilities of Gauhati University. Wherever possible, preparation of the sample for various analytical methods and introduction to analysis of the experimental data was also covered during the lecture sessions. For the convenience of the participants, they were grouped into smaller numbers and visited the analytical facilities in rotation.

One-Week Training Programme on					
Opportunities for Research and Innovation using the DST-Sponsored Facilities of Gauhati University					
<p><i>Organized by</i> Department of Instrumentation and USIC Gauhati University</p> <p><i>sponsored by</i> Department Of Science & Technology, Govt. of India (STUTI)</p>					
Date	09:30 AM to 10:30 AM	10:30 - 11:30 AM	11:30 AM to 01:00 PM	01:00 PM to 02:00 PM	02:00 PM to 05:00 PM
Day 1 24 Nov. 2022 (Thursday)	Inauguration (Venue: Seminar Hall, Gauhati University Institute of Science and Technology)	High Tea	Powder XRD and its applications Dr. Bimal K. Sarma	Lunch Break	Familiarization of all the DST sponsored facilities in Gauhati University Dr. Debashis Saikia
Date	10:00 AM to 11:30 AM	11:30 AM to 01:00 PM		01:00 PM to 02:00 PM	02:00 PM to 05:00 PM
Day 2 25 Nov. 2022 (Friday)	Principles and Applications of Single Crystal X-Ray Diffraction Prof. Gopal Das	Imaging Techniques for material characterization Dr. Hemen Kalita		Lunch Break	Hands-on Session (Single Crystal X-Ray Diffraction, UV-Visible spectrometer and High Resolution Mass Spectrometry)
Day 3 26 Nov. 2022 (Saturday)	Principles of X-Ray Fluorescence and its Applications Dr. Pranjit Hazarika	Principles and Applications of UV-visible spectroscopy Dr. Tridib Sarma		Lunch Break	Hands-on Session (Powder X-Ray Diffraction)

Day 4 27 Nov. 2022 (Sunday)	Introduction to Nuclear Magnetic Resonance Spectroscopy Dr. Nilamoni Nath	Application of Nuclear Magnetic Resonance Spectroscopy Dr. Pranjal Baruah	Lunch Break	Hands-on sessions (X-Ray Fluorescence Spectroscopy)
Day 5 28 Nov. 2022 (Monday)	Characterization of Magnetic Materials Prof. A. Srinivasan, IITG	Principles of Thermal Analysis Methods: DSC and TGA Dr. Rupam Sarma	Lunch Break	Hands-on sessions (Thermo Gravimetric Analysis and Differential Scanning Calorimetry)
Day 6 29 Nov. 2022 (Tuesday)	Lecture Prof. Rajendra G. Sonkawade	Applications of Thermal Analysis Methods in Materials Characterization Prof. Jubaraj Bikash Baruah	Lunch Break	Visit to the Institute of Advanced Study in Science and Technology
Day 7 30 Nov. 2022 (Wednesday)	Lecture Prof. Rajendra G. Sonkawade	Valedictory Session	Lunch Break	Real time PCR as an Analytical tool with Hands-on session Dr. Sujoy Bose

Activities:

Apart from the training activities the participants were taken to the Institute of Advanced Study in Science and Technology, Boragaon, Guwahati which is a DST sponsored research institute close to the university. The participants were introduced to the various high-end equipment present there and the work culture followed in the institute. The participants were familiarized with the procedure to use the analytical facilities present in IASST.

The participants were also taken for a river cruise on the Brahmaputra River.

Feedback Analysis:

Feedback Analysis: DST-STUTI Program
Gauhati University
May, 2022

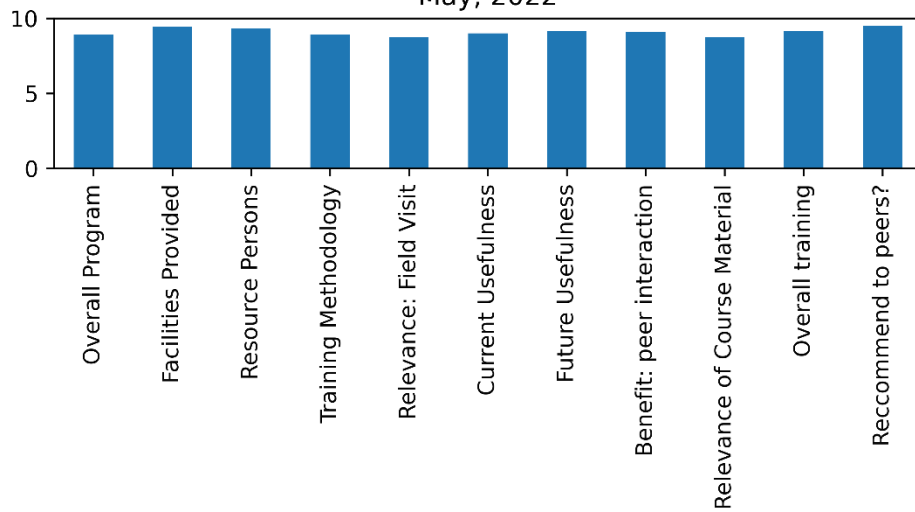


Photo Gallery:







