Lab Visit Report
26th November 2022
Department of Chemistry, Kamrup College, Chamata (KCC)

Faculty and Students
Department of Chemistry
Kamrup College, Chamata (KCC)

Host Laboratory: Chemistry Department Laboratory
Indian Institute of Technology, Guwahati (IITG)

Funding: Self-Financed

The Department of Chemistry, Kamrup College, Chamata, organized a one-day educational (Lab) visit to **Indian Institute of Technology, Guwahati (IITG)** on **26th November 2022**, for **B.Sc. 1st semester (Honours) Student**. A total of **5** students and **4** faculties (Teachers-in-charge) were involved in the group. We started our trip at around 8.30 AM on that particular day from college premise and reached IITG at around 10.30 AM.

Picture 1: Arrival at IITG at 10:30 AM

Overview of Lab Visit:

On arrival at IITG, *Prof. Bhubaneswar Mandal* from the Department of Chemistry gave us a warm welcome and assisted us in accomplishing all the formalities at the entrance. He spared some time out of his busy schedule to introduce us to everyone in his laboratory. Having *Dr. Sujan Kalita*, a former Ph.D. student of *Prof. B. Mandal*, in our group was a blessing. After the

introductory session, Ph.D. research scholars from Prof. Mandal's lab enthusiastically invited our students to show different instruments and experiments in their laboratory. Both our professors and students were ecstatic to see the IITG laboratory structures. Initially, *Dr. S. Kalita* and *Mr. Sukesh Shill*, a Ph.D. student gave an overview of all the laboratory staff and the purposes of the tools and equipment used in the laboratory.

First, they gave a quick explanation of high-performance liquid chromatography (HPLC). They explained how each component in a reaction mixture is separated, identified, and quantified using an HPLC apparatus. They also discuss the chemistry, operating principles, and operational methods of the HPLC.

Picture 2: Dr. S. Kalita and *Mr. S. Shill demonstrating the working principle of HPLC, distillation and thin layer chromatography (TLC).*

Picture 3: Demonstration of the working principle of HPLC

They then switch to a different instrument, a centrifuge machine. A centrifuge machine is an instrument that employs centrifugal force to separate different fluid constituents. After learning the significance and operation of the centrifuge, our students were really enthusiastic and asked many queries.

Students first learned about separational procedures and their principles before moving on to solvent removal techniques. The most widely used tool for removing solvent from a mixture is the rotary evaporator. *Dr. S. Kalita* expertly delivered all the information regarding the instrument and demonstrated it by removing hexane and ethyl acetale solution. Its operating principle and procedure are very simple to learn.

Picture 4: Ms. Nikita Chakrabarty and *Mr. Bubul Das with their labmates explaining the chromatographic techniques.*

Then, after 1.5 hours, we move on to a different laboratory, where we met two IITG research scholars, *Miss Nikita Chakrabarty* and *Mr. Bubul Das*, who were former lab mates of *Dr. Bhaskar Deka*. We found them to be very friendly, well communicative and they had an extensive knowledge of all aspects of chromatography. They described every chromatographic process used in their laboratory in straightforward language. Students learn the importance and principle of thin-layer and column chromatography. Additionally, they discussed how to set up a reaction, prepare a reaction mixture, and separate various organic compounds based on polarity in a reaction.

Finally, we proceeded to the laboratory of *Dr. Kalyan Raidongia*. Our esteemed colleague *Miss Barsha Rani Bora* is a Ph.D. student currently working under the supervision of *Dr. K. Raidongia*. She led us to her laboratory, where she briefly described her research and showed us various scientific equipment with their operational principles. She described to the students and teachers how to set up a laboratory and the purpose of various key equipment like hood, oven, shakers, sourcemeter and sonicator etc. She also explained our students how any reaction can heated upto 800°C in inert condition using a tube furnace under continuous flow of Nitrogen gas.

Picture 5: Miss B. R. Bora explaining the operation of hood and tube furnace

After touring the lab, the students were seated for a discussion with *Dr. K. Raidongia*. With his engaging voice and charismatic attitude, *Dr. K. Raidongia* motivates us during this session. By outlining the possibilities open to chemistry students, he motivates the students to pursue research. Additionally, he inspired the students by going over some basic chemistry concepts. He concluded by wishing everyone, including the instructors and students, a prosperous future. Our esteemed colleague *Mr. Himanshu Bora*, the teacher-in-charge, was so enthusiastic and helpful during our visits that we appreciate all of his valuable time.

Picture 6: With Dr. K. Raidongia Sir

When it was finally time for lunch at 3 PM, we headed to the IITG canteen and enjoyed the campus' splendour. Both faculty and students had fun and captured lots of pictures. We returned back to the college grounds at around 5.45 PM.

Picture 7: Campus visiting hour

Acknowledgements: We, the Department of Chemistry, KCC, would like to thank our respected Principal sir, Dr. D. K. Bezbaruah (KCC). We are grateful to the experts' team for their valuable time and informative talks, and also to the entire support staff and students of IITG, who have helped us during the programme. Special thanks to Prof. Bhubaneswar Mandal, IITG, Dr. Kalyan Raidongia, IITG, Mr. Himangshu Bora, KCC, Mr. Sukesh Shill, Ph.D. scholar, Mr. Bubul Das, Ph.D. scholar, Mrs Nikita Chakrabarty, Ph.D. scholar, and everyone who have supported us.

Organiser
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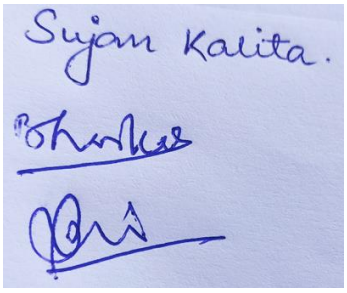

Teacher-in-charge

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