

**NIUS Teachers' Workshop on
Enhancing learning in the chemistry laboratory courses at undergraduate level
HBCSE, TIFR
October 14, 2022**

Members of chemistry group conducted a one-day teachers' workshop as a part of the National Convention of Chemistry Teachers held at Shri Vaishnav Institute of Science, Indore from October 12-14, 2022. This workshop was a part of National Initiative on Undergraduate Science (NIUS) programme and was held on October 14, 2022. A total of 14 undergraduate teachers teaching chemistry in different colleges of Indore participated in this workshop.

Two experiments were done with the teachers in a mode where first pre-lab discussions were conducted about the experiment to be done. The discussions prepared teachers to understand the experimental procedures and objectives better. The pre-lab was followed by hands-on experiments. After experiments, there was another round of post-lab discussions using guided questions, which help learners to analyse the results and consolidate their learnings from the experiment conducted.

One of the experiment was determination of the composition of a carbonate rock sample using complexometric titrations and the other was synthesis of dinitrobenzene from nitrobenzene using a green route. The teachers were divided in two groups and but they performed the experiments individually. The organic experiment was chosen from laboratory manual of the under-graduate syllabi and the titration based experiment was adapted from the preparatory problems published as a part of 50th International Chemistry Olympiad, 2018*. These were modified to enhance the learning of students by developing pre-lab and post-lab questions. There were rich discussions on experimental procedures and conceptual understanding emerging from these.

At the end of the programme, an open discussion and feedback session was conducted. Overall, the sessions at the workshop highlighted the techniques for enhancing teaching-learning process and the importance of pre- and post-lab in the laboratory practical at the under-graduate level.

* [PrepProblems-50-ICHO-Practical_20180601.pdf \(icho2021.org\)](https://www.icho2021.org/prep/problems/50-ICHO-Practical_20180601.pdf)