

NIUS Teachers' Camp

Enhancing learning in the chemistry laboratory courses at undergraduate level

HBCSE, TIFR

February 23-24, 2023

Members of chemistry group conducted a two-days teachers' workshop held at Govt. Madhav Science PG College, Ujjain from February 23-24, 2023. This workshop was a part of National Initiative on Undergraduate Science (NIUS) programme. A total of 45 undergraduate teachers teaching chemistry in different colleges of Madhya Pradesh 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 analyze the results and consolidate their learnings from the experiment conducted. One of the experiment was synthesis of a coordination compound followed by estimation of its composition and the other was qualitative analysis of organic compounds. The teachers were divided in two groups and they performed the experiments in pairs or team of three. 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.

Other than the experiments, there was a session on Design of Experiment. This session involved discussions around the structure of an experiment which has to be designed with given set of chemicals and apparatus.

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.

