

**NIUS Chemistry Camp (Online)**  
**HBCSE, TIFR**  
**Batch XVII**  
**December 20-30, 2021**

National Initiative on Undergraduate Studies (NIUS), a major initiative of HBCSE-TIFR concerning tertiary education in India, was organized online from Dec 20-30, 2021 using Zoom platform and Moodle app. A total of 85 students pursuing second year of their graduation from different universities of India participated in the camp. Moodle accounts was generated for each participant through which they were able to access every information regarding the camp.

A number of sessions related to a) frontier research areas in the chemistry, b) core areas/concepts, c) laboratory activities involving planning and decision making, d) comprehension of scientific papers and e) learning concepts through inquiry based approach using Process Oriented Guided Inquiry Learning (POGIL) were conducted in the camp. Along with faculty and members of chemistry group from HBCSE, there were resource persons from like TIFR Hyderabad, IIT Bombay, IIT Guwahati, IIT Delhi, ICT Mumbai, University of Oxford, Pune University, NCL Pune and local colleges of Mumbai who conducted diverse sessions with the students.

Some representative areas in theory were historically important chemical reactions, role of physicochemical properties in drug transport, kinetics and reaction engineering, understanding the cardiac system, stereochemistry and conformation, opportunities in discipline base science education and research, Nobel prizes in chemistry, gender and science, etc. Apart from theoretical sessions, several workshops (often as group-work) like reading and comprehending a research paper, and planning of experiment, learning concepts through inquiry based approach, abstract writing, etc were conducted. The experimental sessions geared in appreciating the usefulness of having pre and post lab questions for better understanding of experiments. The experiments discussed with the students were a) Benzoylation of aniline b) Estimation of hardness of water and c) Kinetics of hydrolysis of ethyl acetate. Separate activity sessions on introduction to molecular dynamics and computer based exercises in physical chemistry were also conducted with the students. Students were given assignments which were to be submitted through Moodle.

The main aim of NIUS camp is to expose and excite undergraduate students towards the diverse areas in chemistry. The interactions of students with the teachers and researchers from various institutions motivate and inspire the students to pursue science and build a career in the respective field.