

Experimental Workshop in Chemistry

Homi Bhabha Centre for Science Education (HBCSE-TIFR), Mumbai

April 12, 2022

Under the National Initiative on Undergraduate Science (NIUS) programme, the chemistry group, and physics group at HBCSE conducted a one-day workshop for the undergraduate students from Abasaheb Garware College, Pune University on April 12, 2022. The workshop was conducted at HBCSE, Mumbai. A group of 24 students pursuing B.Sc. participated in the workshop.

The workshop included experimental and theoretical sessions. The workshop began with an experimental session in chemistry on “Determination of equilibrium constant for complex formation between Fe (III) and SCN^- solution by colorimetry”. The experiment was divided into two parts, (i) To determine the molar absorptivity of the iron thiocyanate complex and (ii) Determine the equilibrium constant of the complex using Job’s method. Students were divided into 4 groups, and they performed the experiment using UV-Vis spectrophotometer. The collected data was discussed collectively during the post lab session.

The students visited the physics lab post lunch. The sessions were conducted by Dr. Shirish R. Pathare of physics group at HBCSE, Mumbai. He took a session on “The methodology of experiments”. In the experimental session, he demonstrated many interesting experiments to students related to (i) the Michelson interferometer, (ii) Air Table, (iii) Linear Air Track, (iv) Planet Transition and (v) Diffraction due to helical structure.

These sessions were followed by discussion on the experimental procedure and results of the chemistry experiment with Dr. Ankush Gupta. Students calculated the equilibrium constant and actively participated during the discussion.

Dr. Ankush Gupta also discussed and demonstrated conductometric experiments on water samples collected from different water bodies in India. Water from different water bodies have different dissolved minerals and their concentrations, due to their origin, altitude etc., which leads to corresponding changes in conductance.

