



HSNC UNIVERSITY, MUMBAI

KISHINCHAND CHELLARAM COLLEGE



Report on a visit to

" Sunandan Divatia School of Science - NMIMS" on the occasion of 'Open Day'

By Dept of Life sciences, KC College

Department of Life Sciences and Biochemistry, KC College HSNC University visited **Sunandan Divatia School of Science - NMIMS** on 24th February 2023 on the occasion of 'Open Day' organized by the institution. A total of 24 participants from third year undergraduate Life Sciences and Biochemistry were the part of this visit. Two of the faculty members, Mr. Romil Dagha from the dept of Life Sciences and Ms. Sukaina Abbas, research scholar of the department, accompanied the KC students.

The visit commenced with an introductory session on the facilities and different techniques which would be introduced to the students. The first device introduced was the Photochemical Reactor which is used to carry out a photochemical reaction, water splitting, and photo chlorination reaction. The student volunteers also explained the complete setup of the reactor which includes triple jacketed immersion well, medium and high-pressure mercury lamp, lamp power supply, a chiller for cold water circulation, safety cabinet and magnetic stirrer. Potentiostat/Galvanostat, which is the electrochemical workstation, was discussed too. It is an instrument that manages the application of voltage or current to an electrochemical cell electrode. The potentiostat is the main measurement tool used in electrochemical and electro analytical experiments. They also explained how their aim is to make a better battery using this device, which piqued the student's interest. The volunteers gave an in-depth explanation of the applications of these instruments too.

Further, the students visited the Chemistry Lab, where they observed the working of a High Performance Liquid Chromatography. It is used for separation of a

mixture of compounds in analytical chemistry and biochemistry so as to identify, quantify or purify the individual components of the mixture. Next, the students saw the UV Visible Spectrophotometer which works on the principle of Beer-Lambert's Law which had various applications in qualitative analysis, enzyme assay, and study of cis-trans Isomerism, quantitative analysis, absorption spectra of food dyes and also its use as detectors in various systems like HPLC. Lastly, the students saw FTIR, Fourier-Transform Infrared Spectroscopy and Michelson Interferometer. Furthermore, the students visited the Cell culture laboratory and observed the instruments such as the Bio-safety cabinets, Incubator, Carbon dioxide tank, Centrifuge, Refrigerator, and the Cell counter. Various Cell Culture Medias and a Mammalian cell under a microscope were shown to the students. Next, the student volunteers gave an in depth explanation and demonstration of DNA Extraction and RNA Extraction. Agarose Gel Electrophoresis and Western Blot was then elucidated in detail, by the student volunteers.

The next technique explained was the Enzyme Linked Immunosorbent Assay, where the working of ELISA, its types (Direct, Indirect, Sandwich and Competitive), applications and its instrumentation consisting of micro filter plates and multi channel pipette were also described. The demonstration of synthesizing and characterizing nanoparticles and introduction to Nanotechnology and its applications was then elucidated by the student volunteers. Lastly, the students were given the demonstration of Real-Time Polymerase Chain Reaction along with applications of PCR.

On the whole, the visit proved to be an intriguing and inspiring experience. The use of an attractive PowerPoint presentations, charts, graphs and demonstration of the different methods kept the students engaged and helped them in better understanding of the contents of the sessions. The student volunteers patiently addressed to all the questions from the students thus ensuring clarification of the concept behind the techniques exhibited. The visit also helped students in bridging the gap between the theoretical concepts taught to them in classroom and actual working of the instruments. Overall, the student participants were appreciative of the session which made the visit a great success.



A Photochemical Reactor



A Fourier Transform Infrared Spectroscopy

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