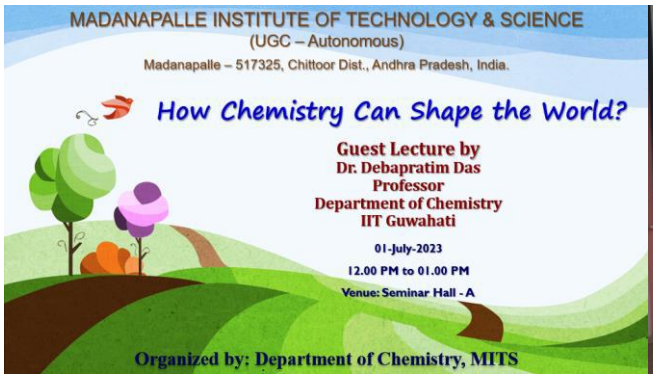
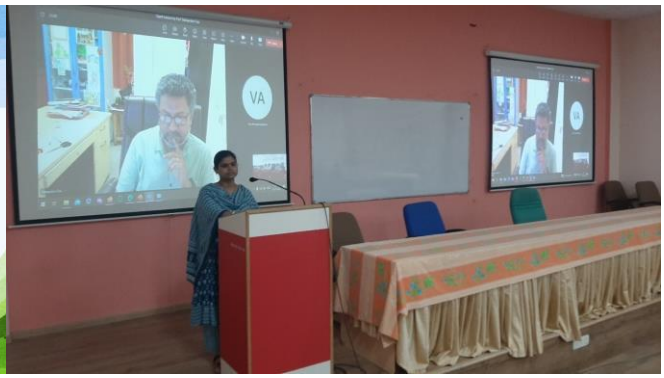
Report on
Guest Lecture on
"How Chemistry Can Shape The World"
Organized by
Department of Chemistry
01.07.2023





Submitted by : Dr. Renjith Bhaskaran, Assistant Professor, Department of Chemistry, MITS, Madanapalle.

Co-ordinated by : Dr. Renjith Bhaskaran, Assistant Professor, Department of Chemistry, MITS, Madanapalle.

Resource Person: Prof. Debapratim Das, Dept. of Chemistry, IIT Guwahati

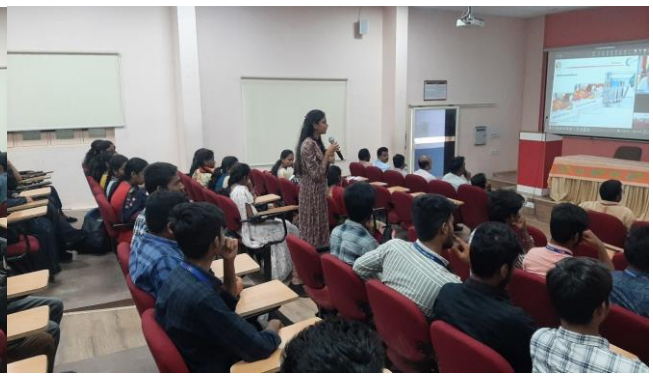
Report Received on 12.07.2023

Attendance: 82 students of 1st year CSE-A & CSE-D section (Internal) & all faculty members from Department of Chemistry.

The event was started by Dr. Tulasi Barik of Dept. of Chemistry, Madanapalle Institute of Technology & Science, Madanapalle (MITS) through her welcome speech at 12.00 PM followed by the inaugural address to the gatherings by Dr. Renjith Bhaskaran, HoD-Chemistry, MITS, Madanapalle.

Further, Vice Principal Academics- Prof. P. Ramanathan of MITS addressed the gathering through an online platform. The resource person of the event Dr. Debapratim Das, Professor, Department of Chemistry, Indian Institute of Technology Guwahati, Assam joined through online. The academic profile of Prof. D. Das was introduced to the gatherings by Dr. Amaladass P., Assistant Professor, Department. of Chemistry, MITS, Madanapalle.


Prof. D. Das started the lecture by extending his sincere thanks to the participants, organizing members, HoD - Chemistry, Principal, Vice Principal and Management of MITS Madanapalle for giving him the opportunity to share his knowledge and experience in Chemical Science research and allied branches. He discussed the scientific definition of Chemistry, its importance and connecting factor as “life is its highest expression” in day-to-day life in the introductory remarks. He adds further that there is very less “wow” factor to the general population in Chemistry making the subject less attention.

The first part of his lecture focused on explaining the importance of knowing the electronic configuration of atoms, concept of moles, and Thermodynamics & Chemical Kinetics in understanding the subject in a better way. He illustrated this by giving examples of using mobile phone, pen, television, the application of pharmaceutical chemistry in the form of drug/medicine and so forth.

In the second part of the talk, Prof. Das briefly discussed the chemical inventions and/or discoveries that changed the world. Started with the usage of copper in around 8000 B.C. (copper age) to the synthesis of ammonia via Haber-Bosch process, & synthesis of Urea (then used as fertilizer). He then listed that **"*how a chemist can change the world*"** in a good and bad way. He explained this with the story of Nobel Laureate Fritz Haber for his discovery of Nitrogen fixation which shaped the world in a better way. On the other hand, the "chlorine gas attack" during world war I was supervised by Haber.

The following discoveries and its importance in day-to-day life are listed out during the later stages of his second part of the talk. The are the,

1. Polymerization of ethylene molecule (usage of polyethene bags)
2. Semiconductor materials in electronics
3. Polymerase Chain Reaction (RT-PCR test for covid-19)
4. Liquid crystal display (LCD) and fiber optics
5. Lifesaving drugs such as Penicillin etc.

Towards the last part, he discussed about the recent work going on his research group wherein they are keenly interested in safe administration of anticancer drug to avoid any side-effect otherwise known as *targeted drug delivery system in chemotherapy*. The effective usage of the molecule that they synthesized (known as PyKC) in treating breast cancer on mice is illustrated with the help of snapshots taken during their experiment. He further discussed the importance of wearable electronics in monitoring the drug delivery process. He concluded the lecture by giving a message to the audience that the modern science is interdisciplinary, and one can always learn something new to enhance the life of common man.

The lecture was then followed by a question & answer session.

The event was concluded at 01.15 PM by a vote of thanks given by Dr. Arunbabu Dhamodaran, Assistant Professor of Department of Chemistry, MITS, Madanapalle.