

SCHOOL OF PHARMACEUTICAL AND HEALTH CARE TECHNOLOGY
&
DEPARTMENT OF BIOTECHNOLOGY
MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WB

DST-STUTI Sponsored Hands-on Training Program

On

**"TECHNOLOGICAL ADVANCEMENT IN PHARMACEUTICAL & HEALTH CARE
RESEARCH"**
(January 4-10, 2023)

Final Report

School of Pharmaceutical and Healthcare Technology and Department of Biotechnology MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WB (MAKAUT) in Collaboration with Jamia Hamdard PMU, New Delhi on "Technological Advancement in Pharmaceutical & Health Care Research" organized from January 4 to 10, 2023. It was an initiative by the Department of Science and Technology (DST), Government of India under its Flagship "Synergistic Training program Utilizing the Scientific and Technological Infrastructure (STUTI)" Scheme.

The main objectives of this training program were to provide an overview (theory as well as hands-on training) of Technological Advancement in Pharmaceutical & Health Care Research. The topics which were covered included novel drug delivery, cell separation and culture, 3-D printing, formulation development, IR spectroscopy, advanced Microscopy for staining, and visualization of cells, digital health, and artificial intelligence.

Numerous applications were received and a total of 30 participants were selected for this training program. They belonged to diverse states of India viz. Jammu & Kashmir, Bihar, Jharkhand, Assam Odisha, Bihar and West Bengal. Among the participants, there were 14 faculty members, 14 Ph.D. students, 2 M Pharm student. The gender ratio almost was 50% males and 50% females.

During the inauguration session, the Guest of Honor Dr. Partha Pratim Lahiri, Registrar, MAKAUT, W.B, Dr. Atri Bhowmick, Finance Officer, MAKAUT,WB , Prof. Suhel Pervez,Coordinator DST-STUTI, Jamia Hamdard PMU New Delhi, Patron, Dr.C.M.Hossain , Professor, Convener, DST – STUTI, Dr. Jaya Bandopadhyay, Co-Convener, DST-STUTI .

Apart from all the 30 participants, there were many other faculty members from other Departments of MAKAUT. In the welcome address, Convener, Dr.C.M.Hossain, Department of Pharmaceutical Technology in his welcome note said that Advancement in formulation technology with the incorporation of AI and data science resulted in a massive change in the field, he also stressed that inter-disciplinary margins are getting thinned, and as a result, we are getting programs as STUTI. In continuation, Coordinator DST STUTI, Prof. Suhel Parvez, Jamia Hamdard, New Delhi, outlined about DST STUTI scheme and said that Jamia Hamdard is one of the 13 PMU selected by the Government of India in 2022 under which MAKAUT, WB is the first university in eastern India to be selected for the program. Dr. Partha Pratim Lahiri, Registrar, MAKAUT, WB, stressed on advancement in research and the current scenario.

Post Lunch, the first talk was delivered by Prof. Suhel Pervez, who abridged about drug repurposing. His topic was “Advance Techniques and Drug Repurposing in Pharmaceutical Research.” A lecture on drug repurposing and stereotaxis. The second resource person Dr. Krishnangshu Ray,Medical Director, Peerless Hospital, discussed on Pharmaceutical & Health Care Research stressing on information and knowledge on gene delivery, metabolomics and proteomics.

On Day 2, the 5th January 2023, the first session was taken by Dr.Totan Ghosh, Faculty, Applied Chemistry, in a workshop on the handling of IR – Spectroscopy he actually demonstrated a sample run, and the result was analyzed by the participants. Post lunch had two sessions one by Dr. Prof.(Dr.) Biswajit Mukherjee, Dept. of Pharmacy, Jadavpur University on the topic Drug targeting with Nanoformulation with a special reference to aptamer in hepatocellular carcinoma in rat model. The lecture imparted abundant knowledge on aptamers and their application in pharmaceutical and biological research. The second lecture was by Dr. Subhrojyoti Bhowmik, Clinical Director, Peerless Hospital Kolkata emphasizing on the topic Role of Technology in Clinical Data Management. The lecture familiarized the participants with the roles of hospitals and physicians in clinical trials and related technologies.

On Day 3, the 6th January, 2023, the first session was an workshop by Dr. Debdut Naskar on Cell Culture . Post lunch sessions were comprising of two sessions one Dr. Piyali Basak, Director, School of Bioscience & Engineering, Jadavpur University Kolkata on the topic Advanced Drug Delivery System and the second one was by Prof.(Dr.) Sanmoy Karmakar, Dept. of Pharmacy, Jadavpur University on the topic Long QT syndrome - a sensitive prediction for Drug Safety. Both the topics equally benefitted the participants by the lectures that were very articulate and informative.

On Day 4, the 7th January 2023, the Morning session was a Workshop on Formulation development by Dr. Sanjit Kr. Roy. Post-lunch sessions were comprised of two sessions one by Mr. Avishek Dutta, Manager, Cognizant, on Automation in PV: Way Forward, and the second one was by Prof. Dr. Ramkrishna Sen, Dept. of Biotech, IIT, Kharagpur on the topic Microbial biopolymers: Product development endeavor for potential healthcare applications. Both equally were interactive and enlightening. As one delivered a very interactive session on the role of machine learning in pharmacovigilance, and the other emphasized on future possibilities for formulation development using microbial biopolymers respectively.

On Day 5, the 8th January 2023, the Morning session was a Workshop on Formulation development by Dr. Sanjit Kr. Roy. Post-lunch sessions were comprised of two lectures one Prof. (Dr.) C.M.Hossain Maulana Abul Kalam Azad University of Technology West Bengal on the topic Molecules to Medicines: Antimicrobial Drug Discover, especially Against Invasive Candidiasis and the second one, was by Prof. (Dr.) Arup Mukherjee MAKAUT, WB, on Some Small Molecules and

Nanoparticles to Mitigate Amyloidogenic Protein Fibrillation. Both the presentations were equally interactive and enlightening.

On Day 6, the 9th January 2023, in the morning session was conducted by Dr. Monalisa Char on advanced Microscopic techniques. Post-lunch sessions were taken by Dr. Kaushik Mukhopadhyaya, Dept of Pharmacology, AIIMS Kalyani on the topic of Artificial Intelligence in Healthcare. The other was taken by Dr. Prantar Chakaraborty, Senior Consultant, Digital Health, MAKAUT, WB on the topic Healthcare Technology: Small Ideas, Big Impact. Both lectures were found to be very informative and thought-provoking.

On Day 7, 10th January 2023, the morning session was enlightened by two different talks by Dr.

Santanu Chakraborty, Associate Professor, Presidency University, and Dr. Arunima Sengupta, associate Professor of the Department of Biotechnology, Jadavpur University delivered lectures on A Pulsatile Bio-incubator: Cells, Signaling and Beyond and Tuning of Cardiomyocyte Survival and Death Pathways: Involvement of Cardiac Transcription Factors, respectively. Post lunch session was the valedictory session in the presence of Chief Patron, Prof. Saikat Maitra Hon'ble Vice Chancellor, MAKAUT, WB, and Guest of Honor, Dr. Ramji Singh, Director, AIIMS, Kalyani. The certificates and mementos were distributed to the participants. Feedback was also collected in the format provided, The program ended with a vote of thanks.

The participants started leaving on 11th January 2023 morning.