

## **ANNEXURE-III**

### **Program Report of Three day's Hands on Training on "UV Spectroscopy and IR Interpretation: Exploring Molecular Insights"**

A 3-day hands-on training program titled "UV Spectroscopy and IR Interpretation: Exploring Molecular Insights" was organized by Shri B. V. Patel Education Trust, Ahmedabad, in collaboration with Indukaka Ipcowala College of Pharmacy, a constituent college of CVM University. The event was coordinated by Ms. Jinal N. Tandel, with Mrs. Heta M. Kachhiya and Mr. Krunal Solanki serving as co-coordinators. The program was conducted under the guidance of Dr. Neeta Srivastava, Dy. Director BVPET and Dr. Harsha V. Patel, Principal of the host institute.

On August 12, 2024, the inaugural function of the workshop commenced in accordance with Indian tradition and culture, with the ceremonial lighting of the lamp by the Chief Guest, Dr. Manish Nivsarkar, Director of B. V. Patel Education Trust, Ahmedabad, and the Guest of Honour, Prof. (Dr.) Sandeep Walia, Registrar of CVM University, Vallabh Vidyanagar. The event began with the recitation of shlokas in praise of the Almighty.

During the inaugural function, Dr. Harsha V. Patel introduced and welcomed the dignitaries both on and off the dais. As a gesture of appreciation, all dignitaries were presented with plant saplings. Prof. (Dr.) Sandeep Walia encouraged the participants and extended his best wishes for the success of the workshop.

In his inaugural address, Dr. Manish Nivsarkar congratulated the participants for attending the event and spoke about the initiatives carried out by Shri B. V. Patel Education Trust, Ahmedabad. He emphasized the significance of spectroscopy in drug analysis and its critical role in research. He also commended the organizers of the host institute for providing a platform that fosters new ideas and aligns with the theme of the hands-on training workshop.

Ms. Jinal N. Tandel welcomed the invited guests, delegates, and resource persons and provided a brief overview of the workshop's theme and the schedule for the three-day event.

The workshop featured a series of plenary lectures delivered by eminent speakers, each focusing on different aspects of the workshop's theme. The first session began with an insightful lecture on "Principle and Theory of IR" by Dr. Vipul Vaghela, Principal of A.R. College of Pharmacy & G. H. Patel Institute of Pharmacy, V. V. Nagar. Dr. Vaghela shared his extensive experience with the participants,

covering the basic principles of IR spectroscopy, the nature of waves and light, and how to study molecules using the wave equation with respect to wavelength and wavenumber. He also commended the organizers for providing a platform that encourages new perspectives aligned with the workshop's theme.

The second plenary lecture was delivered by Mr. Pravin Pathak, Product Specialist in Spectroscopy at Agilent Technologies (I) Pvt. Ltd., on the topic "IR Instrumentation: FT-IR Spectrometers and ATR Sampling." He provided an in-depth discussion on the instrumentation of both FTIR and ATR, sample preparation for IR studies, and the relevance of these techniques in the industry.

Following a delicious lunch, the post-lunch session focused on "IR Spectra Interpretation and Problem Solving," conducted by Dr. Dimal A. Shah, Professor at Indukaka Ipcowala College of Pharmacy, New V.V. Nagar. The session was highly interactive, with delegates actively participating in the interpretation of various structures and IR spectra based on frequency. The first day of the workshop concluded successfully with high tea as a refreshing close to the day's activities.

On the second day, August 13, 2024, the workshop continued with a plenary session led by the dynamic speaker Dr. Payal Chauhan, Assistant Professor at Ramanbhai Patel College of Pharmacy, CHARUSAT, Changa. She delivered an insightful lecture on the "Basic Principle and Theory of UV Spectroscopy," where she thoroughly explained the fundamentals of spectroscopy, the detailed theory of electron transitions, and the UV principle. Dr. Chauhan also discussed the impact of different solvents on molecules and their spectra.

The second plenary session focused on "Instrumentation and Method Development on UV Spectrometer," conducted by Dr. Usmangani K. Chhalotiya, Associate Professor at Indukaka Ipcowala College of Pharmacy, New V.V. Nagar. He elaborated on the various components of UV instrumentation and emphasized the importance of method development for analyzing marketed formulations.

In the post-lunch session, participants were given hands-on training on UV instrumentation. They were divided into two groups for practical experience. Group 1, led by Mrs. Heta M. Kachhiya, conducted single-drug analysis, while Group 2 was guided by Mrs. Mital Parmar. Participants enthusiastically engaged in the training, performing experiments on the UV instrument, making the session highly interactive and educational.

On the final day, August 14, 2024, two plenary sessions were conducted. The first session was led by Ms. Jinal Tandel, focusing on "Multicomponent Analysis using UV Spectroscopy." She provided an in-

depth explanation of the analysis of mixtures containing two or three drugs using UV spectroscopy, discussing various techniques for multicomponent analysis.

The second and final plenary session of the workshop was on "Prediction of Wavelength Maxima using Woodward-Fieser Rules," presented by Mrs. Hetaben Kachhiya. She explained how to predict the wavelength maxima based on the molecular structure using the Woodward-Fieser rules. Participants were given examples to practice, allowing them to apply the rules with her guidance.

After lunch, the groups reconvened in the analysis lab for hands-on training in multicomponent analysis. Group 1 received training under the guidance of Mr. Krunal Solanki, while Group 2 was led by Ms. Jinal Tandel. Participants gained practical experience in multicomponent analysis, learning how to use the software and develop methods on the UV instrument.

An online quiz was organized to assess the knowledge gained during the workshop. All participants scored above 50%. Dr. Neeta Shrivastava, Deputy Director of BVPET, provided concluding remarks, congratulating the participants and coordinators on the successful completion of the three-day hands-on training workshop. Certificates of participation were awarded to all delegates to recognize their efforts.

The workshop saw the participation of 20 attendees, who expressed their appreciation in the feedback. The event concluded with a vote of thanks delivered by Mr. Krunal Solanki.

Ms. Jinal Tandel, Mrs. Heta M. Kachhiya and Mr. Krunal Solanki the Coordinators from Indukaka Ipcowala College of Pharmacy, extended their heartfelt gratitude to BVPET, CVMU, resource persons, chairpersons, and participants for their contributions in making the workshop a grand success.