

Report on Hands-on Training on FTIR

Date: 12/12/2022

Venue: Physics Research Laboratory

Organized By: Department of Physics, Ismail Yusuf College

Introduction

A hands-on training session on Fourier Transform Infrared Spectroscopy (FTIR) was conducted at [Venue] on [Date], organized by [Organizing Body/Institution]. The workshop aimed to provide participants with practical experience in operating FTIR instruments, interpreting spectra, and understanding its applications in various scientific disciplines.

Training Session

The training session commenced with an introductory presentation on the principles and theory behind FTIR spectroscopy. Mr. Prashant Kanojiya, a leading researcher in spectroscopic techniques from Lab India Private Limited, provided insights into infrared radiation, molecular vibrations, and the Fourier transform technique used in FTIR.

Hands-on Practical Sessions

Participants engaged in several hands-on practical sessions throughout the day:

Session 1: Instrument Familiarization

Participants were introduced to FTIR spectrometers and their components. The session covered the principles of infrared radiation absorption, types of detectors, and the operation of interferometers. Safety protocols and instrument calibration procedures were emphasized.

Session 2: Sample Preparation and Handling

Practical techniques for preparing samples for FTIR analysis were demonstrated. Participants learned about sample types, handling considerations, and methods for achieving optimal sample thickness on the ATR (Attenuated Total Reflection) crystal or transmission cell.

Session 3: Data Acquisition

Each participant had the opportunity to operate FTIR instruments under supervision. They practiced setting up measurement parameters (e.g., wavelength range, resolution), acquiring spectra, and ensuring data quality. Real-time feedback from instructors helped optimize experimental conditions.

Session 4: Data Analysis and Interpretation

Participants learned to interpret FTIR spectra during guided exercises. They identified characteristic peaks corresponding to functional groups, analyzed spectral features using software tools, and explored methods for quantitative analysis and peak fitting.

Discussion and Conclusion

Throughout the workshop, participants engaged in discussions on the practical challenges and applications of FTIR spectroscopy in fields such as chemistry, pharmaceuticals, materials science, and environmental science. The session concluded with a summary of key learning points and a Q&A session.


Feedback

Participants provided positive feedback on the workshop, highlighting the value of hands-on experience in understanding FTIR principles and applications. Many expressed appreciation for the interactive nature of the sessions and the opportunity to apply theoretical knowledge in a practical setting.

Conclusion

The hands-on training on FTIR spectroscopy proved to be an enriching educational experience, equipping participants with practical skills and confidence in operating FTIR instruments. It underscored the importance of experiential learning in mastering complex scientific techniques and contributed to enhancing participants' proficiency in spectroscopic analysis.

This workshop not only strengthened participants' technical capabilities but also facilitated networking and collaboration among professionals and researchers interested in FTIR spectroscopy.


Head of Physics Department
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Waran (East), Mumbai-400 060.


Workshop on FTIR (Fourier Transform Infrared Spectroscopy)

The Department of Physics well organized workshop was conducted for teaching staff and M.Sc. Students on “FTIR”. All physics M.Sc. students, teaching and non-teaching staff of the Physics Department were a present for this workshop programme which held on 12th December 2022 in the M.Sc Research Laboratory. The workshop started with an introductory speech of Dr. Ravindra Kalesh (HOD, Physics Department) where he acquainted the students with the aim of the workshop that how the FTIR can be useful as a characterization technique in the research field. The program was then followed by felicitation of chief guest speaker Shri Rohit Parab (Engineer, Bruker). The Speaker explained the technique used to obtain an infrared spectrum of absorption or emission of a solid, liquid, or gas. An FTIR spectrometer simultaneously collects high-resolution spectral data over a wide spectral range. This confers a significant advantage over a dispersive spectrometer, which measures intensity over a narrow range of wavelengths at a time. This workshop as a whole has given the mind of students a curiosity to think over and give a scientific approach toward the research and how the FTIR can be useful as a characterization technique. The students were very much exited to join the research after their completion of M Sc Degree.

Total Students attained: - 24






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GOVERNMENT OF MAHARASHTRA
ISMAIL YUSUF COLLEGE OF ARTS, SCIENCE AND COMMERCE
Jogeshwari (E), Mumbai: 400060

Date:-01/12/2022

Department of Physics

Notice

We are pleased to inform you that the Department of physics has organized an One day Hands-on training on FTIR (Fourier Transformation Infrared Spectroscopy) on 12th December, 2022 in M.Sc.lab at 10:30 am. It is compulsory for all TYBSc and MSc students.

(HOD Physics)

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DATE: 12/12/2022

ATTENDANCE

EVENT: Workshop on FTIR

NO. OF STUDENT: 24 and staff

SR. No.	NAME OF THE STUDENT	signature
1	Dr. RAVINDRA KALESH	
2	Mr. Shardendu Tripathy	
3	Mr. ASHISH BHAINA	
4	Mr. SARVESH SHINDE	
5	MISS ARPANA SANDIMANI	
6	MISS RIZWANA SHAIKH	
7	SHAIKH HUDA SIRAJULHAQ	
8	PAL VIKAS JAIKARAN	
9	SHAIKH BADRUDDIN SHAMSUDDIN	
10	SINGH SHIVAM RANJEET	
11	SINGH SNEHA SANTOSH	
12	VISHWAKARMA RAHUL VINOD	
13	ANSARI TASKEEN SAJID ALI	
14	SHEETAL MAHAPATRA	
15	SHAIKH UZMA	
16	PAWAN TIWARI	
17	SHAIKH RUKAIUYA	
18	SAYED MUZAFFAR ISHAQUE	
19	SHAIKH RUKAIYA	
20	SAHU JAI JAI RAM KUMAR BAIDYANATH	
21	AHIRE AJAY RAMCHANDRA	
22	SAYYED ADIL NAWAZ MOHD ASRAFIL	
23	SHAIKH NAMEERA AMEEN	
24	KHAN SABA PARVEEN ABDUL WAHAB	
25	TRIPATHI SHIVAM ANIL	
26	PANDIT UPENDRA AMIRI	
27	NARVEKAR NETRA MADHUKAR	

(Signature)

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