

A one Day workshop on

Spectroscopic Analytical Techniques for structure Elucidation



Organized By

Department of Chemistry
Morigaon College, Morigaon

Assam 782105

Date: 21-11-2015

Arumima Sarma

Department of Chemistry
Morigaon College

A report on Spectroscopic Analytical Techniques for structure Elucidation

Date: 21-11-2025

Venue: New conference room

Organizing Department: Dept. of Chemistry Morigaon College (autonomous), Morigaon, Assam

Resource person: Dr. Abhilash Sharma, Assistant Professor, B.Barooah College (autonomous), Guwahati, Assam

Objective of the workshop

The primary objective of this workshop on *Spectroscopic Analytical Techniques for Structure Elucidation* is to introduce B.Sc. Chemistry students to the fundamental principles and practical applications of modern spectroscopic methods used in chemical analysis. The workshop aims to develop a clear understanding of how techniques such as UV-Visible spectroscopy, Infrared (IR) spectroscopy, Nuclear Magnetic Resonance (NMR) spectroscopy, and Mass spectrometry contribute to the identification and structural determination of organic and inorganic compounds.

Through interactive lectures and illustrative examples, the workshop seeks to bridge the gap between theoretical concepts taught in the classroom and their real-world analytical applications. It is designed to enhance students' ability to interpret spectra, correlate spectral data with molecular structure, and apply logical reasoning in structure elucidation. Special emphasis will be given to problem-solving approaches, spectral interpretation skills, and common pitfalls encountered during analysis.

Additionally, the workshop aims to familiarize students with the role of spectroscopic techniques in research, quality control, pharmaceuticals, environmental analysis, and industrial chemistry. By the end of the workshop, students are expected to gain confidence in using spectroscopic data for structural analysis, develop analytical thinking, and appreciate the significance of spectroscopy as a powerful tool in modern chemical sciences.

No. of participants: 81

About the Workshop

A one-day workshop on "Spectroscopic Analytical Techniques for Structure Elucidation" was organized on 21 November 2025 for B.Sc. Chemistry students with the aim of strengthening their understanding of modern analytical tools used in chemistry. The workshop was held at the New Conference Room, Morigaon College, and witnessed enthusiastic participation from undergraduate students of the Department of Chemistry.

The workshop was conducted by Dr. Abhilash Sharma, Assistant Professor, B. Barooah College (Autonomous), who served as the resource person for the event. The programme began with an introductory session highlighting the importance of spectroscopic techniques

in chemical analysis, research, and industrial applications. Dr. Sharma provided a comprehensive overview of the fundamental principles underlying various spectroscopic methods and explained their role in the elucidation of molecular structure.

During the technical sessions, detailed discussions were held on **UV-Visible spectroscopy, Infrared (IR) spectroscopy, Nuclear Magnetic Resonance (NMR) spectroscopy, and Mass spectrometry**. Emphasis was given to the interpretation of spectra, correlation of spectral data with molecular structure, and step-by-step approaches to structure determination. Real examples and case studies were used to help students understand how multiple spectroscopic techniques are combined to arrive at a correct molecular structure.

The workshop was highly interactive, with students actively participating in discussions and asking questions related to spectral interpretation and common analytical challenges. Special attention was given to problem-solving techniques relevant to undergraduate-level examinations and research-oriented learning.

Overall, the workshop proved to be highly beneficial for the participants, as it helped bridge the gap between theoretical knowledge and practical application of spectroscopy. The one-day programme enhanced the analytical skills and confidence of B.Sc. Chemistry students and motivated them to explore spectroscopy as an essential tool in higher studies, research, and professional careers in chemistry.

Outcome of the Workshop

The one-day workshop on *Spectroscopic Analytical Techniques for Structure Elucidation* proved to be highly effective in achieving its academic objectives and enriching the learning experience of B.Sc. Chemistry students. By the end of the workshop, participants developed a clearer understanding of the fundamental principles and applications of key spectroscopic techniques such as UV-Visible, Infrared (IR), Nuclear Magnetic Resonance (NMR), and Mass spectrometry.

Students gained practical insight into the interpretation of spectral data and learned systematic approaches for correlating spectroscopic information with molecular structure. The interactive nature of the sessions enhanced their problem-solving abilities and improved their confidence in analyzing and interpreting spectra relevant to undergraduate studies. The workshop also helped students recognize the importance of combining multiple spectroscopic techniques for accurate structure elucidation.

Additionally, the programme increased students' awareness of the role of spectroscopy in advanced research, pharmaceuticals, environmental analysis, and industrial chemistry. Exposure to real-life examples and case studies motivated participants to apply theoretical concepts to practical scenarios.

Overall, the workshop successfully bridged the gap between classroom learning and real-world applications of spectroscopy. It strengthened analytical thinking, encouraged scientific curiosity, and inspired students to pursue higher studies and research in chemistry, making the workshop a valuable academic experience for all participants.

Department of Chemistry
MORIGAON COLLEGE (A), MORIGAON, ASSAM,

From:-
Dr. Arunima Sarma
HOD, Department of Chemistry
Morigaon College (A), Morigaon



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To
The Principal,
Morigaon College (Autonomous), Morigaon
Assam, 782105

Subject: Seeking permission to conduct a workshop on 21-11-2025.

Sir,

With due respect I would like to inform you that, the Department of Chemistry, Morigaon College (Autonomous) want to organize a workshop on "Spectroscopic Analytical Techniques for Structure Elucidation" on 21/11/2025 at 11 am, New Conference Hall. In this occasion we would like to invite **Dr. Abhishash Sharma**, Assistant Professor, B. Barooh College (Autonomous), as a Resource Person.

Therefore, I request you kindly allow us to conduct the workshop on the mentioned date.

With Regards

Arunima Sarma
Dr. Arunima Sarma
HoD, Department of Chemistry
Morigaon College (Autonomous)

Department of Chemistry
MORIGAON COLLEGE (A), MORIGAON, ASSAM.

From:-
Dr. Arunima Sarma
HOD, Department of Chemistry
Morigaon College (A), Morigaon



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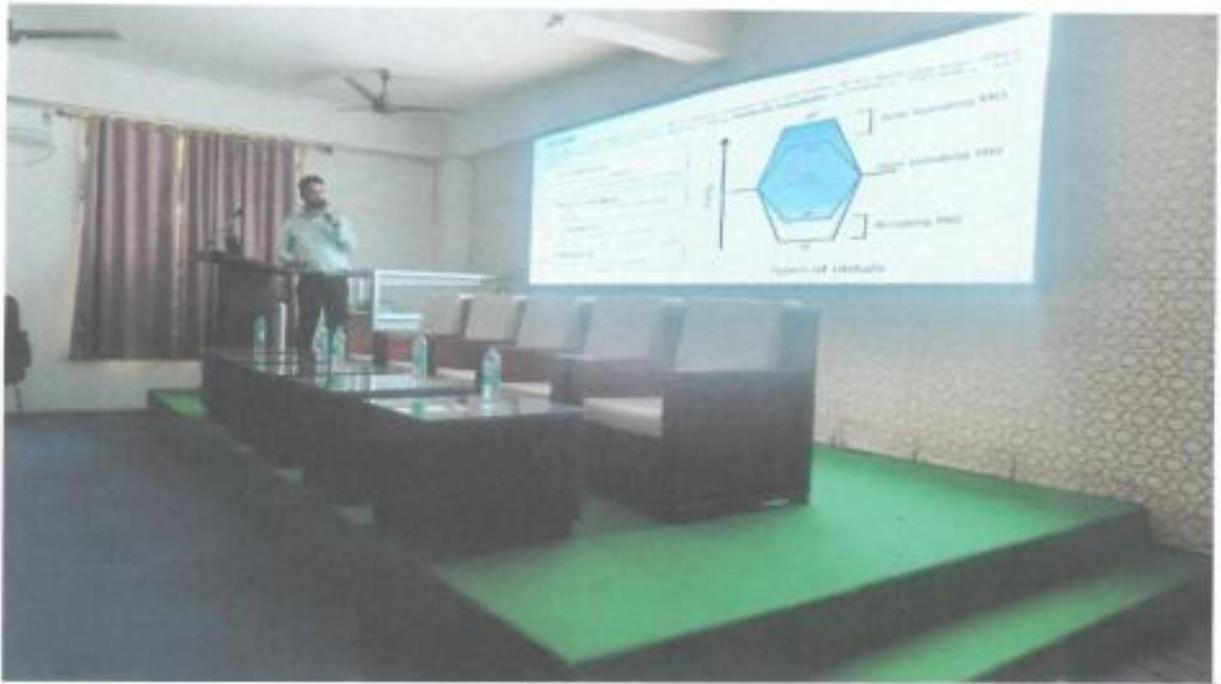
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With Regards

Arunima Sarma
Dr. Arunima Sarma
HOD, Department of Chemistry
Morigaon College (Autonomous)

Photos





Signatures

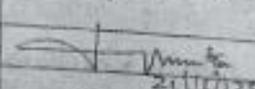
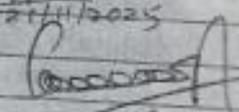
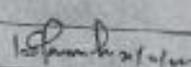
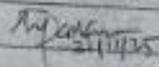
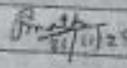
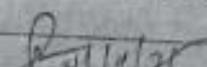
One Day Workshop on
Spectroscopic Analytical Techniques for
Structure Elucidation.

Date - 21/11/2025 Time: 11am.

Resource Person: Dr. Abhilash Sharma

Signature: 

Signatures:

S/N	Name	Designation	Signature
1	Dr. Lila Kant Barhakar	Principal	
2	 Anjima Sharma	Vice Principal	
3	Ajit Konwar	IBAC, Coordinator	
4	Dr. Jayanta Barhakar	Asst. Prof. Botany	
5	Dr. Hemanga Jyoti Samal	Asst. Prof. Phys	
6	Kupali K. Gogi	Asst. Prof. Mathematics	
7	Dr. Rupam Shankar Nath	Asst. Prof. Maths	
8	Dr. Ritvi Das	Asst. Prof. Chemistry	
	Dr. Anagati Baruah	Asst. Prof. Chem	
	Prithvi Kashyap	Asst. Prof. (Botany)	

Student signature

S/N	Name	class	DEPT.
1	Nishan Chahani	5th sem	Chemistry
2	Mudhara Hussain	5th sem	Chemistry
3	Gulzar Hussain	5th sem	Chemistry
4	Jenfar Rahman	3rd sem	Chemistry
5	Rashmi Kakati	"	"
6	Maurya Saikun	1st sem	Maths
7	Nanjin Afrata	1st sem	Zoology
8	Tejina Bhuyan	1st sem	Zoology
9	Krishnamoni Deka	3rd sem	Chemistry
10	Kuldeep Deka	3rd sem	Chemistry
11	Anif Akman	3rd sem	Chemistry
12	Amal Krishna Dev Nath	3rd sem	Chemistry
13	Nirman Jyoti Bora	"	Chemistry
14	Mukfar Hussain	1st sem	Chemistry
15	Ashraful Islam	1st sem	Chemistry
16	Shafiqul Islam	1st sem	Chemistry
17	Muhammad Ali	1st semester	Chemistry
18	Jyotshikrita Devi	3rd sem	Chemistry
19	Kumkum Meelhi	3rd sem	Chemistry
20	Kaara kumar Biswas	1st sem	Botany
21	Abhyut Biswas	1st sem	Chemistry
22	Abhishek Mandal	1st sem	Chemistry
23	Dwanath Biswas	1st sem	Chemistry
24	Nitushi Bora	1st sem	Chemistry
25	Jit Kumar Biswas	1st sem	Chemistry
26	Ajbar Ali	1st sem	Chemistry
27	Pragnyashree Bora	1st sem	Chemistry (Zoo)
28	Rishiraj Kashyap Deka	1st sem	Botany
29	Ahmad Usol	1st sem	Botany
30	Sandosh Shaw	1st sem	Botany
31	Shyamali Devi	1st sem	Mathematics
32	Poojara Tamuli	1st sem	Mathematics

SN	Name	class	dept.
33	Lahmiba Mahmood	1st sem	chemisatmy zoology
34	Masumi Bhattacha	1st sem	zoology
35	Sini Sankari	1st sem	Botany
36	Ananya Kashyap	1st sem	Botany
37	Kanya Ikingia	1st sem	Zoology
38	Priyansha Kalita	1st sem	Zoology
39	Mahija Begum	1st sem	Botany
40	Pranika Mandal	1st sem	Botany and Chemistry
41	Prabha Devi	1st sem	Botany
42	Duisanj Banglari	1st sem	Botany
43	Maitanka Kashyap	1st sem	Zoology
44	Mainmay Deka	1st sem	zoology
45	Suresh Kumar Devi	1st sem	Botany
46	Manashin Mahanta	1st sem	Botany
47	Nanaa Bosa	1st sem	Botany
48	Anam Bosa	1st sem	Botany
49	Rishovogouma Borca	1st sem	Math
50	Apurba Kakati	1st sem	Botany
51	Manash Jyoti Das	1st sem	Zoology
52	Suprat Malo	1st sem	zoology
53	Dakshin Deka	1st sem	Zoology
54	Dhananjay Boudolaj	1st sem	Zoology
55	Deekshita Sankar	1st sem	Zoology
56	Jyotishmita Devi	1st sem	Zoology
57	Abinath Kumar Nath	1st sem	mathematics
58	KAJAL DEKA	1st sem	mathematics
59	Satyajit Nath	1st sem	mathematics
60	Dipankar Malo	5th sem	Chemistry
61	Pranay Hazarika	5th sem	Chemistry
62	Himangshu Boudolaj	5th sem	Chemistry
63	Ibon Kumar Nath	5th sem	Chemistry
64	Sanskrit Malo Nath	5th sem	chemistry

65.	Fahul Kuman Vardhi	5 th Sem	Chemistry
66	Akhlesh Patan	5 th Sem	Chemistry
67	Saurabh Bondaloi	1 st sem	Zoology
68	Ramagn Anchi	1 st sem	Zoology
69	Umae Pasua	3 rd sem	Chemistry
70	Exarab Ali	3 rd sem	Chemistry
71	Bhupen Bordubi	3 rd Sem	Chemistry


 Head
 Department of Chemistry
 Mongaon College