Guru Nanak College, Sri Muktsar Sahib Session:

2023-2024

Name of the Department: Department of Chemistry

NMR as a Tool for Structure Illucidation of Chemical Compound

And

Visualization Chemistry: Molecular Geometry and Substitution Reaction through ICT tools

Sponsored by DBT, New Delhi

(Under Star College Scheme)

1. **Name of the Activity Organized:** Extension lectures on Chemistry in NMR as a tool for a structure illucidation of chemical compound and molecular geometry and substitution reaction through ICT tools
2. **Date and Venue of the Activity:** March 15, 2024
3. **Name of the Resource Person, Designation and Address:** Dr. Vinod Kumar, Associate Professor, Department of Chemistry, Central University of Punjab , Bathinda

   Dr. Rakesh Kumar, Assistant Professor, Department of Chemistry, Central University of Punjab, Bathinda
4. **Objectives of Activity:** To provide the knowledge about the concept of NMR and visualization chemistry through ICT tools
5. **Number and Details of the Participants/ Beneficiaries:** 130

S. No.	Class	Roll No.	Name of Student
1	B.Sc. II M	5301	Simran Kaur
2	B.Sc. II M	5303	Sumeetpal Kaur
3	B.Sc. II M	5304	Puneet Kaur
4	B.Sc. I M	5201	Jasnoorpreet Kaur
5	B.Sc. I M	5203	Neelam Rani
6	B.Sc. I M	5204	Sunita Rani
7	B.Sc. I M	5206	Jasleen Sharma
8	B.Sc. I M	5207	Ishpreet Kaur

9	B.Sc. I M	5208	Ankit Kumar
10	B.Sc. I M	5209	Arshnoor Singh
11	B.Sc. I M	5210	Amanjot Singh
12	B.Sc. I M	5211	Sukhman Singh
13	B.Sc. I M	5212	Ekamveer Kaur
14	B.Sc. I M	5214	Arzoo
15	B.Sc. I M	5238	Lovepreet Singh
16	B.Sc. II M	5302	Jashanveer Kaur
17	B.Sc. II M	5305	Baawalpreet Kaur
18	B.Sc. III M	5401	Kshish
19	B.Sc. III M	5402	Vandana
20	B.Sc. III M	5403	Khushdeep
21	B.Sc. III M	5404	Kanika
22	B.Sc. III M	5405	Jot
23	B.Sc. III M	5406	Zeenat
24	B.Sc. III M	5407	Rajni
25	B.Sc. III M	5408	Foolmala
26	B.Sc. III M	5409	Sukhveer
27	B.Sc. III M	5410	Amanjot
28	B.Sc. I NM	5501	Davinder Shakya
29	B.Sc. I NM	5502	Muskan
30	B.Sc. I NM	5503	Gurshinder Singh
31	B.Sc. I NM	5504	Shiv Bajaj
32	B.Sc. I NM	5505	Ramandeep Kaur
33	B.Sc. I NM	5506	Karandeep Kaur
34	B.Sc. I NM	5507	Simran Kaur
35	B.Sc. I NM	5508	Harcharan Singh
36	B.Sc. I NM	5509	Manjinder Kaur
37	B.Sc. I NM	5510	Tamanna

38	B.Sc. I NM	5511	Payal
39	B.Sc. I NM	5512	Payal Rani
40	B.Sc. I NM	5513	Arshdeep Singh
41	B.Sc. I NM	5514	Gurwinder Singh
42	B.Sc. I NM	5515	Manjot Kaur
43	B.Sc. I NM	5516	Arshpreet Kaur
44	B.Sc. I NM	5517	Jaspreet Kaur
45	B.Sc. I NM	5518	Jashanpreet Singh
46	B.Sc. I NM	5519	Sumanpreet Kaur
47	B.Sc. I NM	5520	Chahat
48	B.Sc. I NM	5521	Ramandeep Kaur
49	B.Sc. I NM	5522	Rekha Rani
50	B.Sc. I NM	5523	Amreen Kaur Brar
51	B.Sc. I NM	5524	Sania
52	B.Sc. I NM	5525	Rachandeep Singh
53	B.Sc. I NM	5526	Rajpreet Singh
54	B.Sc. I NM	5527	Sahibjeet Singh Dhillon
55	B.Sc. I NM	5528	Krrish Arora
56	B.Sc. I NM	5529	Arpan Kumar
57	B.Sc. I NM	5530	Simran
58	B.Sc. I NM	5531	Harpreet Kaur
59	B.Sc. I NM	5532	Khushdeep Kaur
60	B.Sc. I NM	5533	Simranjeet Kaur
61	B.Sc. I NM	5534	Adarshnoor Kaur
62	B.Sc. I NM	5535	Anchal Choudhary
63	B.Sc. I NM	5536	Smile
64	B.Sc. I NM	5539	Arshdeep Kaur
65	B.Sc. I NM	5540	Shivam

66	B.Sc. I NM	5541	Hussan Preet Singh
67	B.Sc. I NM	5542	Khushpreet Kaur
68	B.Sc. I NM	5543	Robindeep Kaur
69	B.Sc. II NM	5724	Amitoj Kaur
70	B.Sc. III NM	5901	Gurwinder Kaur
71	B.Sc. III NM	5902	Akanksha
72	B.Sc. III NM	5903	Komalpreet Kaur
73	B.Sc. III NM	5904	Khushi
74	B.Sc. III NM	5905	Prabhjot Kaur
75	B.Sc. III NM	5906	Anmolpreet Kaur
76	B.Sc. III NM	5907	Ramandeep Kaur
77	B.Sc. III NM	5908	Harmandeep Kaur
78	B.Sc. III NM	5909	Manjot Kaur
79	B.Sc. III NM	5910	Noor
80	B.Sc. III NM	5911	Suneha
81	B.Sc. III NM	5912	Nimerveer Kaur
82	B.Sc. III NM	5913	Samanpreet Kaur
83	B.Sc. III NM	5914	Kulwinder Kaur
84	B.Sc. III NM	5915	Simranjeet Kaur
85	B.Sc. III NM	5916	Deepka Rani
86	B.Sc. III NM	5917	Lovepreet Kaur
87	B.Sc. III NM	5918	Sukhpreet Kaur
88	B.Sc. III NM	5919	Aarti
89	B.Sc. III NM	5920	Amisha
90	B.Sc. III NM	5921	Simranjeet Kaur
91	B.Sc. III NM	5922	Karan Sharma
92	B.Sc. III NM	5923	Navneet Kaur
93	B.Sc. III NM	5924	Manider Kour
94	B.Sc. III NM	5925	Ramandeep Kaur

95	B.Sc. III NM	5926	Komalpreet Kaur
96	B.Sc. III NM	5927	Yashdeep Singh
97	B.Sc. III NM	5928	Sukhwinder Singh
98	B.Sc. III NM	5929	Pawanpreet Kaur
99	B.Sc. III NM	5930	Rappu
100	B.Sc. III NM	5931	Shubham
101	B.Sc. III NM	5932	Palak
102	B.Sc. III NM	5933	Jashanjeet Singh
103	B.Sc. III NM	5934	Riya
104	B.Sc. III NM	5935	Neha
105	B.Sc. III NM	5936	Tanu
106	B.Sc. III NM	5937	Ranjeet Singh
107	B.Sc. III NM	5938	Neha Kumari
108	B.Sc. II NM	5701	Gaganpreet Kaur
109	B.Sc. II NM	5702	Jashanpreet Kaur
110	B.Sc. II NM	5703	Harsamrendeep Kaur
111	B.Sc. II NM	5704	Jashanpreet Kaur
112	B.Sc. II NM	5706	Armaan Singh
113	B.Sc. II NM	5707	Amitoj Singh Bhatti
114	B.Sc. II NM	5707	Mitali
115	B.Sc. II NM	5708	Charanjeet Kaur
116	B.Sc. II NM	5709	Sameer Kalra
117	B.Sc. II NM	5710	Tanishka Bansal
118	B.Sc. II NM	5711	Monika Rani
119	B.Sc. II NM	5712	Mehak
120	B.Sc. II NM	5713	Satwinder Kaur
121	B.Sc. II NM	5714	Khushi
122	B.Sc. II NM	5715	Kashish
123	B.Sc. II NM	5716	Kanchan

124	B.Sc. II NM	5717	Veerpal Kaur
125	B.Sc. II NM	5718	Anmol
126	B.Sc. II NM	5719	Mehak Watts
127	B.Sc. II NM	5720	Jashandeep Kaur
128	B.Sc. II NM	5721	Sukhmanjeet Singh
129	B.Sc. II NM	5722	Rupinder Kaur
130	B.Sc. II NM	5723	Harmanjot Singh

6. **Registration/Feedback link: nil**

7. **Video/You-tube Link:** Nil

8. **Outcome of the Activity:** The resource person Dr. Vinod Kumar discussed the NMR as a tool for a structure Illucidation of chemical compound in details. The NMR spectroscopy is a powerful analytical technique used to determine the structure of organic compounds. It exploits the magnetic properties of certain atomic nuclei, particularly hydrogen (^{1}H) and carbon-13 (^{13}C), which are abundant in organic molecules. He discussed about Advanced NMR Techniques like 2D NMR Spectroscopy and other Techniques such as COSY, HSQC, HMBC and NOE.

The resource person Dr. Rakesh Kumar provide the knowledge about Molecular geometry and substitution reaction through ICT tools in details. The ICT tools provide various options for visualizing molecular geometry, ranging from simple 2D drawings to interactive 3D models and understanding substitution reactions. He discussed that Avogadro is an open-source molecular modeling software that allows users to build and visualize molecular structures in 3D. It can also perform geometry optimization and visualize reaction mechanisms, making it suitable for both molecular geometry and substitution reactions.

The students got knowledge about NMR provides valuable insights into conformation, aiding in the characterization of chemical compounds in various fields, including pharmaceuticals, materials science, and natural product chemistry.

9. **Photographs:**

Gnc Muktsar is at **SGPC, Sri Amritsar**.
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Department of Basic Sciences of Guru Nanak College Sri Muktsar Sahib organized Special Lectures Sponsored by Star College Scheme of DBT, New Delhi on 15 March 2024. Dr. Vinod Kumar, Associate Professor in Chemistry, Central University of Punjab, Bathinda, delivered a lecture on Nuclear Magnetic Resonance as a t... See more

10. **Organizing Committee:** Ms. Rajveer Kaur, Ms. Amandeep Kaur
11. **Name of the Department Coordinator:** Ms. Kirandish Kaur

Dr. Anita Rani
DBT Program Coordinator

Dr. Rana Baljinder kaur
Principal