Report on Student Seminar Presentation Series – I

Organized by: Department of Chemistry & Eureka Club

Venue: II B. Sc. Chemistry

Date: 21st September 2023

The Department of Chemistry, in collaboration with the Eureka Club, launched a new initiative – the Student Seminar Presentation Series. This series is designed to provide students with an opportunity to present their research or knowledge on various scientific topics, fostering learning, communication skills, and peer interaction.

The inaugural session of the series took place on 21st September 2023, with Angel Tomy from I B. Sc. Chemistry presenting the first seminar. The topic of the presentation was "Clouds."

Angel Tomy explored the formation, types, and significance of clouds, covering aspects from both a scientific and environmental perspective. The seminar delved into the various types of clouds (such as cumulus, stratus, and cirrus) and their role in weather patterns, climate regulation, and the water cycle. Additionally, the presentation highlighted the connection between cloud formations and atmospheric conditions, with an emphasis on the importance of understanding clouds for meteorology and climate science.

The seminar was well-received by the audience, comprising fellow students and faculty members. It was an insightful session that encouraged discussion on the relevance of clouds in both everyday life and scientific research. The session also sparked interest in further seminars to explore more topics in chemistry and related fields.

This seminar marked a successful start to what promises to be an exciting and enriching seminar series, offering students a platform to present, learn, and engage in scientific dialogue.




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STUDENT SEMINAR PRESENTATION SERIES-1

21/9/2023

ANGEL TOMY

	Name	Class	Sign
1	Isha P. Sunilkumar	IIIrd DC chemistry	
2	Bhavana K	"	
3	Nivedhitha P Subhash	"	
4	Deepthe K	"	
5	Abhirami K.S	"	
6	Anagha Sunil	"	
7	Aswani Jibi	"	
8	Souparnnika T.J	"	
9	Aleena Wilson	"	
10	Hrydaya Subhash	"	
11	Sreenandhana A.S	"	
12	Efriya P.J	"	
13	Emil Maria	"	
14	Jesna Joby	"	
15	Suvarna K.S	"	
16	Deepika K.R	IInd DC chemistry	
17	Shiga P. Sunilkumar	" "	
18	Ameena Nujain	" "	
19	Aysha Rafeek	" "	
20	Drishya K	"	
21	Meghana Mohan	"	
22	Praveena K.P	"	
23	Mithra Sudheesh	Ist DC chemistry	
24	Judevina Martin	Ist DC chemistry	
25	Rossveena Wilson	"	
26	Anjima AS	"	
27	Arya IS	"	
28	Keerthana C.L	"	
29	Grace George	"	

30	SINI SAM	"	Sini
31	Anita Jose	I st DC Chemistry	Anitajose
32	Nowin K P	IInd Dc chemistry	Nowin
33	Angel Tomy	I st Dc chemistry	Angle

Report on Student Seminar by Arya T. S. on Lithium-Ion Battery

Organized by: Department of Chemistry & Eureka Club

Venue: II B. Sc. Chemistry

Date: 21st Feb 2024

The Department of Chemistry, in collaboration with the Eureka Club, launched a new initiative – the Student Seminar Presentation Series. This series is designed to provide students with an opportunity to present their research or knowledge on various scientific topics, fostering learning, communication skills, and peer interaction.

On 21st Feb 2024, Arya T. S. delivered an insightful seminar on the topic of "Lithium-Ion Batteries" as part of the ongoing student seminar series organized by the Department of Chemistry. The presentation provided a comprehensive overview of lithium-ion batteries, a vital technology powering modern portable electronics, electric vehicles, and renewable energy storage systems. Arya began by explaining the basic structure and working principles of lithium-ion batteries, highlighting how lithium ions move between the anode and cathode during charging and discharging cycles. She also detailed the role of electrolytes and the importance of materials used in the electrodes, such as lithium cobalt oxide for the cathode and graphite for the anode.

Arya's seminar delved into the advantages of lithium-ion batteries compared to other types of batteries, emphasizing their high energy density, long cycle life, and lightweight design, which make them suitable for applications ranging from smartphones to electric vehicles. She also touched on the safety mechanisms built into these batteries, such as protective circuitry and thermal management systems, which prevent overheating and ensure reliable performance.

In addition to discussing the chemistry behind lithium-ion batteries, Arya explored recent advancements in the field, including the development of new materials like silicon anodes and solid-state electrolytes, which aim to improve battery capacity, charging speed, and safety. She addressed the environmental challenges associated with lithium-ion battery production, particularly the sourcing of raw materials like lithium and cobalt, and the growing need for recycling to minimize environmental impact.

The seminar concluded with a focus on the future of lithium-ion battery technology and its role in achieving global sustainability goals. Arya explained how innovations in battery technology could help drive the transition to renewable energy by enabling more efficient energy storage, thus reducing reliance on fossil fuels. She also answered questions from the audience about the current limitations of lithium-ion batteries, such as degradation over time and the environmental costs of battery production.

Arya’s well-researched presentation offered a balanced view of both the scientific and practical aspects of lithium-ion battery technology, sparking engaging discussions on its significance in modern life. The seminar was highly appreciated by both students and faculty, providing valuable insights into one of the most critical technologies shaping the future of energy and electronics.


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Student Presentation Series-4.

Presenter :- Anya T.S
Topic :- Lithium-ion battery
Date :- 21.2.2024

1. Anya T.S : Presented 3.00 p.m	I st bsc. chemistry	
2. Grace George.	" "	
3. Angel Tomy	" "	
4. Rossveena Wilson	"	
5. SINI SAM	"	
6. Anita Jose	"	
7. Judevina Martin	" "	
8 Mithra Sudheer	"	
9 ~~Mith~~ Keerthana C.L	" "	
10. Ananya. M	" "	

Report on Student Seminar by Anita Jose on Artificial Intelligence

Organized by: Department of Chemistry & Eureka Club

Venue: II B. Sc. Chemistry

Date: 21st Feb 2024

The Department of Chemistry, in collaboration with the Eureka Club, launched a new initiative – the Student Seminar Presentation Series. This series is designed to provide students with an opportunity to present their research or knowledge on various scientific topics, fostering learning, communication skills, and peer interaction.

On 21st Feb 2024,Anita Jose presented an engaging seminar on the topic of "Artificial Intelligence (AI)" as part of the student seminar series organized by the Department of Chemistry. Anita's presentation provided an in-depth look at the rapidly evolving field of AI, exploring its fundamental concepts, real-world applications, and the impact it has across various industries. She began by explaining the basics of AI, defining it as the simulation of human intelligence in machines that are programmed to think, learn, and perform tasks typically requiring human cognition.

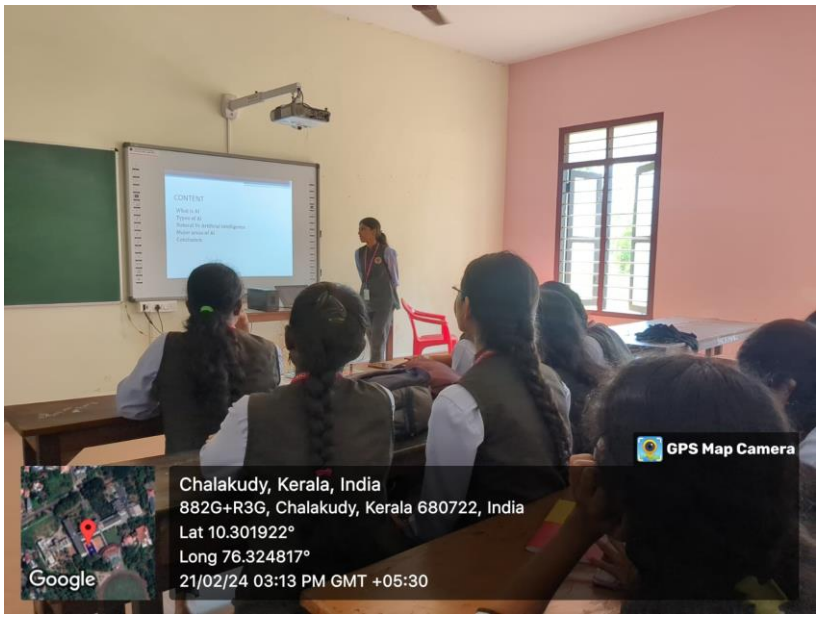
Anita discussed key components of AI, including machine learning, deep learning, and neural networks, offering clear examples of how these technologies enable computers to recognize patterns, make decisions, and improve their performance over time. She elaborated on supervised, unsupervised, and reinforcement learning techniques, demonstrating how machines can be trained to solve complex problems using vast amounts of data.

The seminar also highlighted real-world applications of AI in diverse fields such as healthcare, finance, education, and autonomous systems. Anita explained how AI is revolutionizing industries by enabling predictive analytics, personalized medicine, self-driving cars, and automated customer service. She also touched on AI's role in chemistry and science, particularly in areas like drug discovery, material design, and data analysis, where AI-powered tools are accelerating research and innovation.

Anita then addressed some of the ethical concerns and challenges associated with AI, including the potential for job displacement, privacy issues, and the need for regulatory frameworks to ensure responsible AI development. She also explored the concept of AI bias and the importance of building fair and transparent systems that avoid perpetuating societal inequalities.

The seminar concluded with a discussion on the future of AI, where Anita speculated on the potential for even more advanced AI systems to emerge, possibly leading to breakthroughs in areas like quantum computing and human-AI collaboration. She answered several thought-provoking questions from the audience, ranging from the technical aspects of AI to its broader societal implications.

Overall, Anita's seminar was both informative and thought-provoking, providing a well-rounded understanding of AI, its current applications, and future possibilities. Her ability to break down complex AI concepts into digestible information made the seminar accessible and engaging for all attendees. The presentation not only deepened the audience's understanding of artificial intelligence but also sparked interest in its future developments and ethical considerations.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Student Presentation Series-5

Presenter : Anita Jose
Topic : Artificial Intelligence (A.I.).
Date : 21.2.2024

1. Nithara Sudheer	1st BSc chemistry	
2. Asha T.S	" "	
3. Grace George	" "	
4. Sini sam	" "	
5. Angel Tony	" "	
6. Judevina Martin.	" "	
7. Rosseveena	" "	
8. Keerthana C.L	" "	
9. Ananya. M	" "	

Report on Student Seminar by Judevina Martin on Kinetic Theory of Molecules

Organized by: Department of Chemistry & Eureka Club

Venue: II B. Sc. Chemistry

Date: 21st Feb 2024

The Department of Chemistry, in collaboration with the Eureka Club, launched a new initiative – the Student Seminar Presentation Series. This series is designed to provide students with an opportunity to present their research or knowledge on various scientific topics, fostering learning, communication skills, and peer interaction.

On 21st Feb 2024, the Department of Chemistry continued its student seminar series with a presentation by Judevina Martin, who delivered an insightful lecture on the "Kinetic Theory of Molecules." Judevina explored the fundamental concepts of this theory, which explains the behavior of gases in terms of molecular motion. She began by outlining the historical development of the kinetic theory, referencing the contributions of scientists like James Clerk Maxwell and Ludwig Boltzmann, who formulated key principles of molecular dynamics. Judevina then delved into the core assumptions of the theory, explaining how gas molecules are constantly in random motion, with their behavior governed by basic laws of physics. She discussed important concepts such as temperature, pressure, and volume, and how these relate to the average kinetic energy of gas molecules. The presentation also covered the ideal gas law and deviations from ideal behavior, linking these to real-world applications and experiments.

Judevina's seminar not only clarified the theoretical aspects of molecular motion but also demonstrated its practical significance in fields such as thermodynamics and material science. She engaged the audience with well-illustrated examples and graphs, making complex ideas more accessible. The seminar concluded with an interactive question-and-answer session, during which Judevina addressed questions on the real-life implications of the kinetic theory, including its relevance in understanding phenomena like diffusion and heat conduction. Overall, the presentation was well-received by both students and faculty, contributing to a deeper understanding of the kinetic theory and its role in modern chemistry.

Judevina Martin’s seminar on the "Kinetic Theory of Molecules" was an engaging and thorough exploration of one of the foundational concepts in physical chemistry. She began by explaining the basic postulates of the kinetic theory, emphasizing that gas molecules are in constant, random motion and that their collisions with each other and with the walls of a container are perfectly elastic. Through clear and concise explanations, she helped the audience grasp how the macroscopic properties of gases, such as pressure and temperature, are linked to the microscopic movements of individual gas molecules.

Judevina also discussed the significance of molecular velocity distribution, introducing Maxwell-Boltzmann’s distribution law and explaining how it describes the range of speeds of molecules at different temperatures. She further elaborated on the relationship between temperature and kinetic energy, explaining that higher temperatures lead to increased molecular motion, which in turn influences gas behavior. This aspect of the seminar helped bridge the gap between theoretical knowledge and its practical application in fields like

thermodynamics, where the kinetic theory plays a crucial role in understanding heat, work, and energy transfer.

In addition to the theoretical discussion, Judevina provided real-world examples where the kinetic theory is applied, such as in the study of gases in atmospheric science, the design of engines, and the behavior of gases under different pressures and temperatures in industrial processes. Her use of visual aids, including graphs and diagrams of molecular motion, made complex ideas more accessible and enhanced the audience's understanding of abstract concepts.

The seminar concluded with an engaging Q&A session, during which Judevina fielded questions about real gas behavior, the limitations of the kinetic theory, and its connection to other scientific principles like the laws of thermodynamics. She handled each question with confidence, demonstrating a deep understanding of the subject matter.

Overall, Judevina's seminar was an enlightening session that not only deepened the audience's understanding of the kinetic theory but also illustrated its wide-reaching applications. Her clear explanations, coupled with practical insights, made for a highly informative and enjoyable presentation.





Student Presentation Series - 3.

Presenter :- Judevina Martin
Topic :- Kinetic Theory of Molecules
Date :- ~~2:45PM~~ 21-2-24

1.	Judevina Martin - Presenter 2:45pm	I BSc. Chemistry Kinetic Theory of Molecules	Judevina.
2.	Rossveena Wilson	I BSc. Chemistry	Rossveena
3.	Grace George	I BSc. Chemistry	Grace
4.	Anita Jose	I BSc. Chemistry	Anitajose
5.	Sini Sam	"	Sini.
6.	Angel Tomy	"	Angel
7.	Ananya. M	"	Ananya :-
8.	Keerthana C.L	"	Keerthana
9.	Fathima Hana. MP	"	Fathima Hana
10	Nithara Sudheer	"	Nithara.
11.	Farya T.S.	"	Farya.

Report on Student Seminar by Sini Sam on Cement

Organized by: Department of Chemistry & Eureka Club

Venue: II B. Sc. Chemistry

Date: 21st Feb 2024

The Department of Chemistry, in collaboration with the Eureka Club, launched a new initiative – the Student Seminar Presentation Series. This series is designed to provide students with an opportunity to present their research or knowledge on various scientific topics, fostering learning, communication skills, and peer interaction.

On 21st Feb 2024, Sini Sam delivered an informative seminar on the topic of "Cement" as part of the student seminar series organized by the Department of Chemistry. Sini's presentation offered a detailed exploration of the chemistry behind cement, its manufacturing process, types, and its critical role in modern construction. She began by explaining the basic composition of cement, focusing on its key ingredients such as limestone, clay, and gypsum, and the chemical reactions that occur during the production process, particularly the role of calcium silicates.

Sini elaborated on the manufacturing process of cement, known as the "dry process," where raw materials are heated in a kiln to form clinker, which is then ground to produce the fine powder we know as cement. She explained how the chemical reaction between cement and water, called hydration, is crucial for the hardening and strength development of concrete, making it an essential material for building infrastructure.

The seminar also covered the different types of cement, such as Ordinary Portland Cement (OPC), Portland Pozzolana Cement (PPC), and Rapid Hardening Cement, explaining their specific properties and the types of construction they are best suited for. Sini highlighted the importance of selecting the appropriate type of cement based on the requirements of the project, whether it be for roads, bridges, or residential buildings.

Sini's presentation also touched on the environmental impact of cement production, particularly its contribution to carbon dioxide emissions, and the efforts being made to develop more sustainable alternatives, such as green cement and supplementary cementitious materials like fly ash and slag. She discussed ongoing research in reducing the carbon footprint of cement and promoting the use of eco-friendly alternatives in construction.

The seminar concluded with a discussion on the future of cement in the construction industry, where Sini addressed innovations aimed at improving the durability and sustainability of cement-based materials. The session was followed by an engaging Q&A segment, where students inquired about the various applications of different types of cement and the potential for more environmentally friendly construction practices.

Overall, Sini's seminar was well-received, providing a comprehensive overview of the chemistry, production, and practical applications of cement. Her clear explanations and well-organized content helped the audience gain a deeper understanding of this vital construction material and its significance in both traditional and modern building practices. The presentation effectively combined scientific insights with real-world applications, making it both educational and relevant to the audience.


HISTORY
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Student presentation Series

presenter : Sini sam
Topic : cement
Date : 21.2.2024

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1.	Nithra Sudheer	1st BSc chemistry	Nithra
2.	Darya T.S	"	"	Darya
3.	Grace George	"	"	Grace
4.	Sini sam	"	"	Sini
5.	Angel Tomy	"	"	Angel
6.	Rosseveena	"	"	Rosseveena
7.	Judevina	"	"	Judevina
8.	Keerthana	"	"	Keerthana
9.	Anamya. M	"	"	Anamya

Report on Student Seminar Presentation Series – II

Organized by:Department of Chemistry & Eureka Club

Venue: II B. Sc. Chemistry

Date: 25th September 2023

The Department of Chemistry, in association with the Eureka Club, continued their initiative of the Student Seminar Presentation Series with the second session held on 25th September 2023. This platform provides students with an opportunity to showcase their research and enhance their public speaking and scientific communication skills.

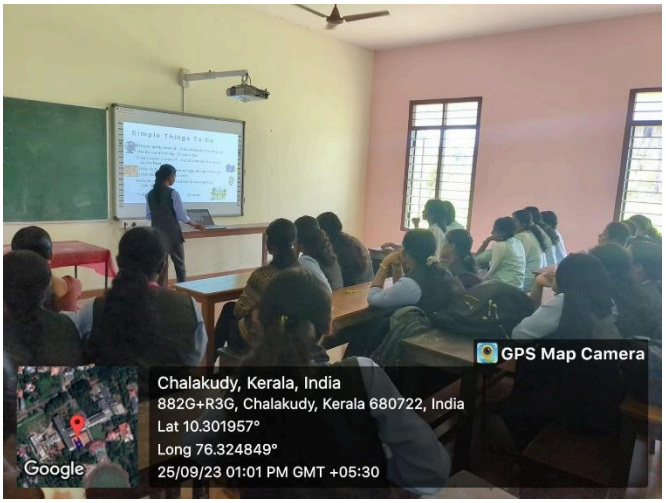
The second seminar of the series was presented by Rosveena from I B. Sc. Chemistry. The topic of the presentation was “Global Warming.”

Rosveena provided an insightful overview of the causes and consequences of global warming. The seminar covered critical factors contributing to the rise in global temperatures, such as the increase in greenhouse gas emissions, deforestation, and industrial activities. She discussed the science behind the greenhouse effect and the role of various gases, including carbon dioxide and methane, in trapping heat within the Earth's atmosphere.

The presentation also addressed the alarming impacts of global warming, such as rising sea levels, extreme weather events, and disruptions to ecosystems. Furthermore, the seminar highlighted potential solutions and the role of sustainable practices in mitigating climate change, emphasizing the importance of global cooperation and policy changes.

The audience engaged in thoughtful discussions following the presentation, raising questions about the current state of environmental policies and the role of chemistry in developing solutions to environmental problems.

This seminar was a valuable addition to the series, helping to raise awareness about one of the most pressing issues facing the planet today. It set the stage for future sessions in the series, encouraging further exploration of scientific and environmental topics.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STUDENT SEMINAR PRESENTATION SERIES II

25/09/2023 ROSVEENA

Name	Class	Sign
1. Abhirami KS	IIIrd DC Chemistry	
2. Hridaya subash	"	
3. Sreenandhana. AS	"	
4. Suvarna K.S	"	
5. Aleena Wilson	"	
6. Aswani Ibi	"	
7. Anagha. Sunil	"	
8. Bhavana. K	"	
9. Deepthi. k	"	
10. Efriya PJ	"	
11. Jesna Jofy	"	
12. Emil Maria	"	
13. Nivedhitha P. Subash	"	
14. Souparnnika. T.J	"	
15. Isha. P. Sunilkumar	"	
16 Nithila Sudheesh	IST DC chemistry	
17. Anita Jose	"	
18. Judewina	"	
19. Rosveena	"	
20. Adithya	"	
21. Arya	"	
22. Angel	"	
23 Sini	"	
24 Anjima	"	
25 Meghana Mohan	IInd DC chemistry	
26. praveena K.P	"	
27. Nowrin K.P	"	
28. Drishya. K	"	
29. Aysha Rafeek	"	
30 Ameera	"	
31 Deepika	"	

22. shiga. p. sunilkumar	IInd DC Chemistry	Shiga