One-Day International Seminar on "Probing Chemical Insights into Biomolecular Advancement"

Organiser : Department of Chemistry , Srikrishna College
Participating MOU College : Chakdah College, Ranaghat College (offline) & Nabadwip Vidyasagar College , Ranchi Women's College (Online)
Place : Room 101 , Acharya Prafulla Chandra Bhawan, Srikrishna College, Bagula Westbengal
Date: 20/08/26

Introduction

The **Department of Chemistry, Srikrishna College, Bagula** organized a **One-Day International Seminar on "Probing Chemical Insights into Biomolecular Advancement"** for the undergraduate students of the college. The seminar was organized with the objective of exposing students to recent developments in biomolecular chemistry and demonstrating the application of chemical principles in areas such as infectious diseases (specifically HIV), photosynthesis, cancer therapy, molecular spectroscopy, nanotechnology, and biomaterials. Four eminent speakers delivered lectures on diverse and contemporary topics, making the seminar highly informative and interdisciplinary.

Objectives

- To familiarize undergraduate students to contemporary modern research approaches and techniques in biomolecular chemistry.
- To develop scientific curiosity and research-oriented thinking among students with an opportunity for direct interaction with experienced researchers.
- To demonstrate the interdisciplinary relationship between chemistry, biology, medicine, and materials science.
- To encourage students to pursue higher studies and research in emerging areas of chemistry.

Programme Flyer & Schedule :



One Day International Seminar on Probing Chemical Insights into Bio-molecular Advancement (HYBRID)

Department of Chemistry, Srikrishna College,
Bagula, Nadia, WB, India

Programme Schedule

Aug 20, 2025 10:30 AM Room 101, **Acharya Prafulla Chandra Roy Building**

Session	Speaker	Timing
Inauguration	• **Mr. Anup Kumar Bhadra**, President • **Dr. Sukdeb Ghosh**, Principal • **Dr. Anamika Chakroborty**, IQAC coordinator • **TCS** • **Head of the Department**	10.30a.m- 10.45a.m
Evolution of HIV Drug Resistance	**Dr. Indrani Choudhury,** Researcher, Salk Institute for Biological Studies, USA	10.45a.m - 11.30a.m.
Functional Characterisation of DNA repair in treatment of Cancer	**Dr. Utpal Ghosh,** Professor, Department of Biochemistry and Biophysics , Kalyani University	11.30a.m - 12.15p.m
Revealing Molecular Mechanisms with Ultrafast Optical Spectroscopy	**Dr. Samim Sardar,** Postdoctoral Fellow, Nanomaterials for Energy and Lifescience, CNST@PoliMi Milano - Istituto	12.15p.m - 1.00p.m
Lunch break	-	1.00p.m -2p.m
Peptide synthesis and self assembly application	**Dr. Jayanta Nanda,** Assistant Professor, Department of Chemistry, North Bengal university, West Bengal	2.00p.m - 2.45p.m
Valedictory	Mr. Avishek Saha	2.45 p.m - 3.00 p.m
All are cordially invited....		

Programme Summary:

The seminar began with a welcome address by **Dr. Sukdeb Ghosh ,** Principal, Srikrishna College followed by an introductory speech by Dr. Anamika Chakraborty, IQAC coordinator, who highlighted the importance of organising seminars for students in interdisciplinary areas.

Speaker 1: Dr. Indrani Choudhury

Topic: "Evolution of HIV Drug Resistance"

Dr. Indrani Choudhury delivered an insightful lecture on the evolution of HIV drug resistance. She discussed how genetic variations and mutations in HIV can enable the virus to survive under the selective pressure exerted by antiretroviral drugs. The lecture emphasized the molecular basis of drug resistance and the challenges associated with computational chemistry providing an important bridge between HIV genetic mutations and their molecular consequences. By predicting how mutations influence drug–target interactions, computational studies can assist researchers in understanding resistance mechanisms and in designing new drugs or drug combinations capable of retaining activity against resistant viral strains.

For undergraduate Chemistry students, the topic demonstrates a valuable application of organic chemistry, physical chemistry, molecular modelling, thermodynamics, and computational methods to an important biomedical problem. It also illustrates how modern computational chemistry can complement experimental research and contribute to the development of next-generation therapeutic agents.The session helped students understand the connection between molecular changes in pathogens and the effectiveness of therapeutic agents.

Speaker 2: Prof. Dr. Utpal Ghosh

Topic: "Harnessing Chemistry for Next-Generation Cancer Therapies: Targeting DNA Repair using PARP Inhibitors"

Prof. Dr. Utpal Ghosh delivered a highly relevant lecture on the role of chemistry in developing next-generation cancer therapies. He focused on the use of PARP inhibitors for targeting DNA repair mechanisms in cancer cells.The lecture introduced students to the importance of DNA repair pathways in maintaining genomic stability and explained how selective interference with these pathways can be utilized as a therapeutic strategy. The discussion demonstrated how chemistry, molecular biology, and medicinal research work together in the development of modern approaches to cancer treatment.

Speaker 3: Dr. Samim Sardar

Topic: "Revealing Molecular Mechanisms of Photosynthesis with Ultrafast Spectroscopy"

Dr. Samim Sardar presented an interesting lecture on the use of **ultrafast spectroscopy** to investigate the molecular mechanisms involved in photosynthesis. He explained how very fast spectroscopic techniques can be used to study energy transfer and electron-transfer processes occurring during photosynthesis.The lecture provided students with an understanding of how physical chemistry and spectroscopy can be applied to explore complex biological processes. It also demonstrated the importance of advanced instrumental techniques in studying molecular events occurring on extremely short time scales.

Speaker 4: Dr. Jayanta Nanda

Topic: "Amino Acids and Short-Peptides Based Self-Assembled Materials"

Dr. Jayanta Nanda discussed the fascinating area of self-assembled materials based on amino acids and short peptides. He introduced the concept of molecular self-assembly, where molecules organize themselves into well-defined structures through various non-covalent interactions. The lecture highlighted the potential of amino acids and short peptides to generate functional materials with applications in nanotechnology, biomaterials, sensing, and biomedical research. Students were introduced to the relationship between organic chemistry, supramolecular chemistry, materials science, and biological systems.

The lectures were followed by interactive sessions in which undergraduate students and faculty members had the opportunity to ask questions and communicate directly with the invited speakers. The speakers encouraged students to develop scientific curiosity and explore research beyond the conventional undergraduate curriculum. The interaction sessions were particularly useful in helping students understand the practical relevance of chemistry in different fields, including drug discovery, disease management, spectroscopy, renewable energy, cancer research, and advanced materials.

Outcomes

The seminar achieved the following important outcomes:

- Students gained exposure to contemporary research in biomolecular chemistry.
- Participants developed a better understanding of the application of chemistry to biological and medical problems.
- Students were introduced to advanced techniques such as ultrafast spectroscopy.
- The seminar created awareness about modern approaches to cancer therapy and DNA repair.

- Students gained knowledge about molecular self-assembly and peptide-based functional materials.
- The programme encouraged students to develop research aptitude and scientific thinking.

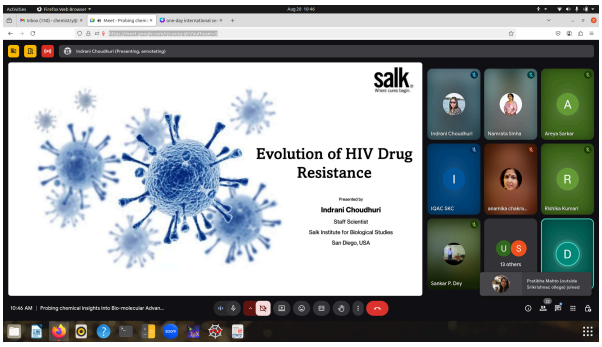
Conclusion

The One-Day International Seminar on “Probing Chemical Insights into Biomolecular Advancement”, organized by the Department of Chemistry, Srikrishna College, Bagula, was an academically enriching and intellectually stimulating programme for undergraduate students. The four expert lectures covered a wide range of contemporary topics, from HIV drug resistance and photosynthesis to cancer therapy, DNA repair, and self-assembled peptide materials. The seminar successfully demonstrated the broad and interdisciplinary nature of modern chemistry and its significant contributions to medicine, biology, spectroscopy, nanotechnology, and materials science. The Department of Chemistry gratefully acknowledged the valuable academic contributions of Dr. Indrani Choudhury, Dr. Samim Sardar, Prof. Dr. Utpal Ghosh, and Dr. Jayanta Nanda. The active participation of the students, faculty members, and institutional authorities contributed significantly to the successful completion of the seminar.

Some Pictures



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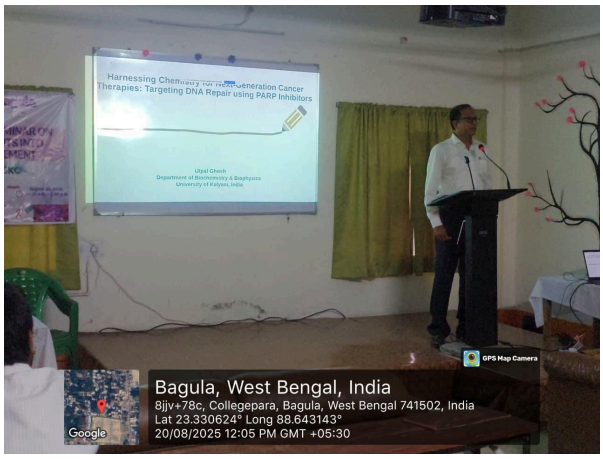
Evolution of HIV Drug Resistance
Presented by
Indrani Choudhuri
Staff Scientist
Salk Institute for Biological Studies
San Diego, USA


Harnessing Chemistry for Next-Generation Cancer Therapies: Targeting DNA Repair using PARP Inhibitors
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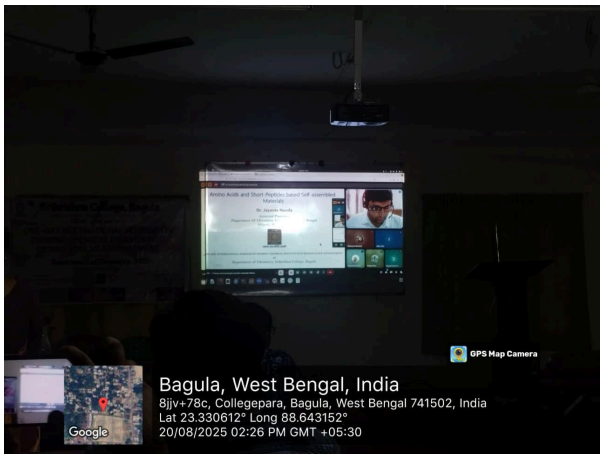
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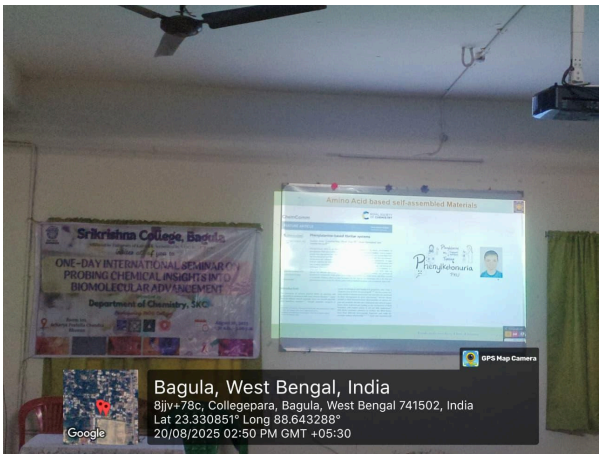



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Registration Details

(ONE-DAY INTERNATION SEMINAR ON PROBING CHEMICAL INSIGHT INTO BIOMOLECULAR ADVANCEMENT)

DATE: 20/08/2025

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DATE: 20/08/2025

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