



Dr.Sudhir Chandra Sur Institute of Technology and Sports Complex

(Formerly Known as Dr.Sudhir Chandra Sur Degree Engineering College)

540, DumDum Road, Surer Math (Near Dum Dum Jn. Station), Kolkata-700074

Phone: +91 22 25603889, 25603898, 65330375

Website: www.surtech.edu.in; Email: info@dsec.ac.in

Report on

“Next-Gen Nanoelectronics & Smart Energy Systems: 60 hr Hands-on Summer Internship 2026.”

Organized by

Nanoelectronics for Energy and Smart Technologies (NEST) Lab

Department of Basic Science & Humanities,

Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex,

(Sur Tech),(Autonomous) JIS Group, Dum Dum

In Association with:

Material Research Society of India, Kolkata Chapter

Society for Materials Chemistry, Kolkata Chapter

Indian Photobiology Society, JU Campus, Kolkata

Subhami Biopharma Pvt Ltd, Kolkata

Sripat Singh College, Murshidabad

People's Association for Science and Environment (PASE) , Kolkata

Sponsored By

Metrohm Autolab

DK-1003, 10th Floor, DLF Galleria, Kolkata-700156.

Title: “Next-Gen Nanoelectronics & Smart Energy Systems: 60 hr Hands-on Summer Internship 2026.”

Date: July 1-10, 2026

Venue: Dr Sudhir Chandra Sur Institute of Technology and Sports Complex, Dum Dum, Kolkata

No. of participant: 14

Time: 10AM – 7 PM

Introduction:

The **60-Hour Hands-on Summer Internship 2026** on "Next-Gen Nanoelectronics & Smart Energy Systems" was successfully organized from **1st July to 10th July 2026** by the **Nanoelectronics for Energy and Smart Technologies (NEST) Laboratory**, Department of Basic Science & Humanities, Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex (SurTech), Autonomous, JIS Group, Kolkata.

The internship was designed to provide undergraduate and postgraduate students with comprehensive theoretical knowledge and practical exposure in emerging areas of **nanotechnology, nanoelectronics, advanced functional materials, smart energy systems, neuromorphic computing, flexible electronics, electrochemical energy storage, and advanced characterization techniques.**

The programme successfully integrated expert lectures, laboratory demonstrations, intensive hands-on experiments, scientific discussions, data analysis sessions, research methodology, and mini-project presentations. Participants gained practical experience using sophisticated research instruments while interacting with eminent academicians, scientists, researchers, and technical experts.

The internship served as an excellent platform to bridge the gap between classroom education and advanced research, thereby promoting scientific innovation, interdisciplinary learning, and research-oriented thinking among young students.

Objectives: The internship was organized with the following objectives:

1. To provide comprehensive knowledge on nanoelectronics and smart energy systems.
2. To impart practical training in nanomaterials synthesis and thin-film fabrication.
3. To provide hands-on experience on advanced research instruments and characterization techniques.
4. To familiarize participants with emerging technologies including neuromorphic devices, flexible sensors, supercapacitors, and green hydrogen.
5. To develop scientific data analysis, research methodology, report writing, and presentation skills.
6. To encourage interdisciplinary research and innovation among young researchers.
7. To create opportunities for interaction with eminent academicians and researchers.

Inaugural Ceremony:

The internship commenced on **1st July 2026** with a formal inaugural session held at the Department of Basic Science & Humanities.

The programme began with the traditional **lighting of the ceremonial lamp**, symbolizing knowledge, innovation, and scientific excellence. Faculty members, invited experts, resource persons, research scholars, and participants attended the inaugural ceremony. The participants were welcomed and introduced to the objectives of the internship, laboratory facilities, research activities of the NEST Laboratory, safety protocols, and the overall programme schedule.

During the orientation session, participants were encouraged to actively engage in laboratory activities, scientific discussions, collaborative learning, and innovative research throughout the internship.

Patron:

- **Sardar Simarpreet Singh**, Director, JIS Group
- **Chief Guest: Prof.(Dr) Neeraj Saxena, Pro Vice-Chancellor**, JIS University

Program Chair:

- **Prof. (Dr.) Saradindu Panda**, Principal, SurTech

Co-Chair:

- **Dr. Soumen Basu**, Registrar, SurTech.

Convenor:

- **Dr. Biswajit Das**, Asst. Professor, Basic Science & Humanities, SurTech

Co-Convenor:

- **Dr. Dipakar Das**, HoD & Asst Professor, Basic Science & Humanities, SurTech



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Eminent Speakers

Sl. No.	Name	Designation	Institute / Organization
1	Prof. Jyotsna Kumar Mandal	Ex-Professor	University of Kalyani, Nadia
2	Prof. Chittaranjan Sinha	Ex-Professor	Jadavpur University, Kolkata, India
3	Dr. Srabanti Ghosh	Principal Scientist	CSIR-CGCRI, Kolkata
4	Prof. Debnarayan Jana	Professor	University of Calcutta, Kolkata
5	Prof. Debashis De	Professor	MAKAUT, Kolkata

Resource Persons

Name	Area
Mr. Amarnath Samanta	Nanomaterials Synthesis, Hydrothermal & Solvothermal Synthesis, Chemical Bath Deposition, Spin Coating
Mr. Vemele Hiese Vadeo	Thermal Evaporation, Thin Film Fabrication, Electrical Characterization
Mr. Md. Faiz Ahmed	Flexible Pressure Sensors
Mr. Niket Raj	Nonlinear Optics and Optical Switching
Ms. Arindrila Das	Electrochemistry, Supercapacitors, Green Hydrogen

Programme Highlights

The internship included

- Expert Lectures ,Hands-on Laboratory Training ,Nanomaterials Synthesis ,Thin Film Fabrication ,Spin Coating Techniques ,Thermal Evaporation ,Flexible Pressure Sensor Fabrication ,Electrical Characterization ,Electrochemical Measurements ,Green Hydrogen Technology ,Supercapacitor Fabrication ,Nonlinear Optical Experiments ,Neuromorphic Device Technology ,UV–Visible Spectroscopy ,Data Analysis using OriginPro ,Research Methodology, Scientific Report Writing ,Mini Project Presentation , Nanomaterial synthesis ,Chemical Bath Deposition ,Hydrothermal synthesis

Learning Outcomes from the conference:

The internship enabled participants to

- Gain strong theoretical knowledge in nanoelectronics.
- Acquire practical laboratory skills.
- Understand advanced characterization techniques.



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- Learn device fabrication methodologies.
- Improve scientific data analysis.
- Develop research methodology skills.
- Enhance scientific writing abilities.
- Improve presentation and communication skills.
- Build confidence in interdisciplinary research.

About Contributing Participant:

A total of 14 undergraduate and postgraduate students from different institutions like St. Xavier's College, Kolkata, Vivekananda college, Kolkata, Ramakrishna Mission Vivekananda Centenary College, Rahara, Narula Institute of Technology, GNIPST, SurTech, etc participated in the internship. Participants were divided into three practical groups (A, B, and C) to ensure individual attention and maximum laboratory exposure. Each participant completed all experimental modules through rotational laboratory sessions. This diverse group contributed to a dynamic and enriching environment throughout the event.

Participant Feedback:

Participants appreciated

- Excellent organization ; Highly informative lectures ; Advanced laboratory exposure ; Individual mentoring ; Friendly learning environment ; Practical-oriented teaching ; Access to sophisticated research facilities ; Opportunities for scientific discussion

Many participants expressed that the internship significantly enhanced their technical knowledge, laboratory skills, and motivation to pursue higher studies and research careers in nanotechnology and smart energy systems. The participants' feedback indicated that they found the conference highly beneficial, with many requesting similar internship in the future. A hardcopy of certificate were also issued to the participants.

Special Appreciation for Sponsor Partners:

We would like to thank our sponsorship named Metrohm Autolab, DK-1003, 10th Floor, DLF Galleria, Street No.95, Action Area-I, New Town Rajarhat, Kolkata-700156 partner for their the valuable support and cooperation :

Acknowledgement:

The organizing committee expresses its sincere gratitude to the **Management of JIS Group, Principal, Prof. (Dr.) Saradindu Panda**, the **Department of Basic Science & Humanities**, and the **Nanoelectronics for Energy and Smart Technologies (NEST) Laboratory** for their continuous encouragement and support in successfully organizing the internship.



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Special thanks are extended to all invited experts, resource persons, faculty members, laboratory staff, research scholars, volunteers, and participants for their invaluable contributions, wholehearted cooperation, and enthusiastic participation. The organizing committee sincerely acknowledges the generous support and cooperation of our esteemed sponsors Metrohm Autolab, for their valuable contributions towards the successful organization of the 60-Hour Hands-on Summer Internship Programme. Their dedication and expertise played a significant role in making the internship academically enriching and highly successful.

Valedictory Session:

The internship concluded on 10th July 2026 with a valedictory session and certificate distribution ceremony. Participants presented their mini-projects and shared their learning experiences. The organizing committee appreciated the enthusiastic participation, discipline, and scientific curiosity demonstrated throughout the programme. Certificates were distributed to all successful participants in recognition of their active participation and successful completion of the 60-Hour Hands-on Summer Internship 2026.

The organizers expressed sincere thanks to all delegates, speakers, session chairs, sponsors, faculty members, student volunteers, and organizing committee members for their immense support and contribution toward the grand success of 60 hr Summer Internship.

Conclusion:

The 60-Hour Hands-on Summer Internship 2026 successfully achieved its objective of providing an integrated platform for learning, research, and innovation in the fields of Nanoelectronics and Smart Energy Systems. Through expert lectures, intensive laboratory training, interdisciplinary discussions, and practical research activities, participants acquired both theoretical knowledge and hands-on expertise in cutting-edge technologies.

The internship significantly strengthened participants' technical competencies, research aptitude, scientific thinking, and innovation skills. It also fostered collaboration between students, faculty members, and researchers while inspiring participants to pursue advanced research and higher education in nanotechnology, advanced materials, electronic devices, and sustainable energy technologies.

Glimpses of the Event:



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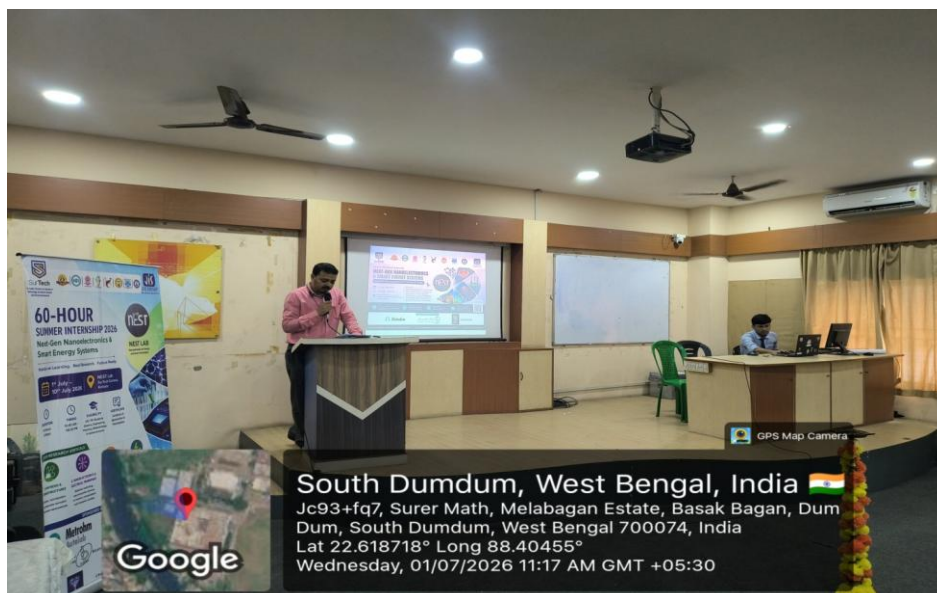
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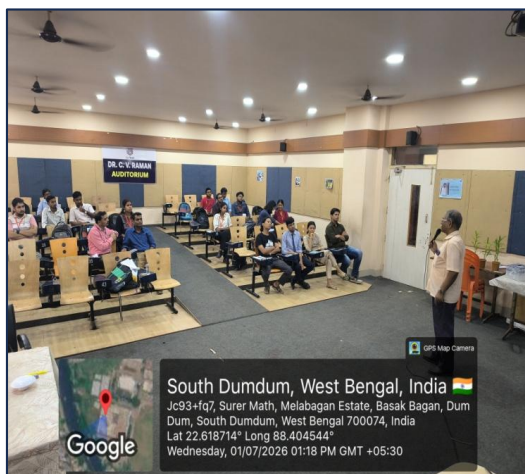
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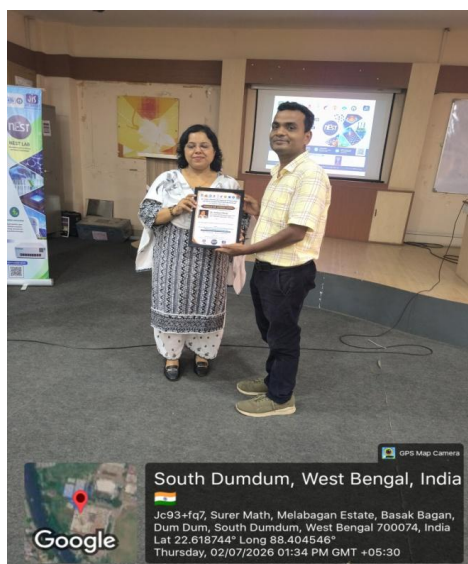
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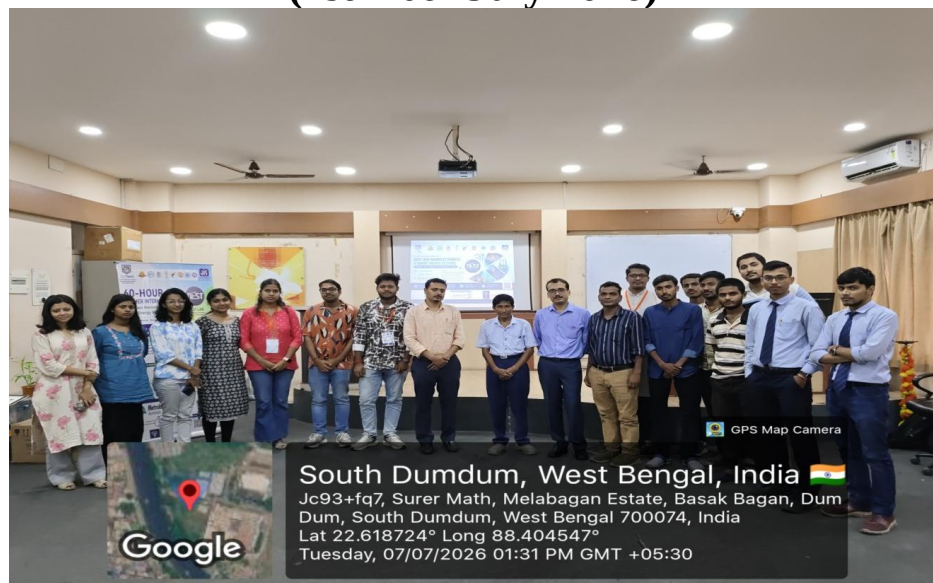
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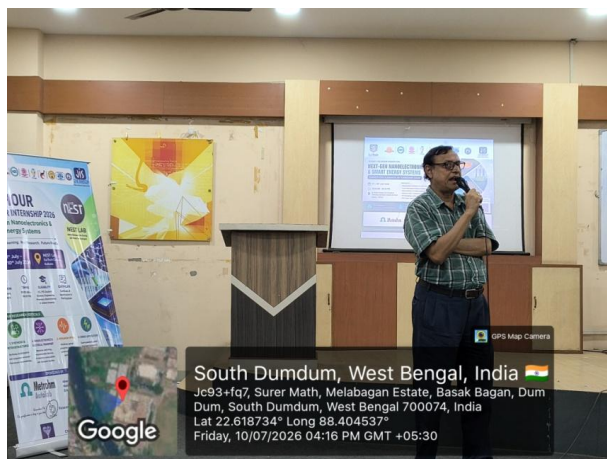
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