



SurTech



JIS GROUP  
Educational Initiatives

# Next-Gen Nanoelectronics & Smart Energy Systems: Hands-on SUMMER INTERNSHIP 2026

A 60-hour hands-on program for UG/ PG Science, Engineering, and Biomedical Students

Learn • Fabricate • Characterize • Innovate • Make an Impact

Organized by  
**Department of Basic Science & Humanities**  
Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex (SurTech)  
(autonomous)

Using  
**Nanoelectronics for Energy and Smart Technologies (NEST) Lab**

Funded by ANRF and JIS GROUP Funding Support

## SYNTHESIS & PROCESSING



Spin Coater



Muffle /  
Tube Furnace



Ultrasonic Bath



Electrochemical  
Workstation

## CHARACTERIZATION & ANALYSIS



UV-Vis  
Spectrophotometer



Electrical  
Characterization  
System



Thin Film & Device  
Fabrication Setups



Optical Measurement  
System

## PROGRAM MODULES (60 HOURS)



### 1 FUNDAMENTALS (10 Hours)

- Introduction to Nanoscience & Nanoelectronics
- Energy Materials & Smart Energy Systems
- Introduction to Nanoelectronics



### 2 MATERIAL SYNTHESIS (15 Hours)

- Synthesis of Nanomaterials
- Thin Film Deposition & Spin Coating
- Heat Treatment (Muffle & Tube Furnace)
- Solution Processing Techniques



### 3 CHARACTERIZATION TECHNIQUES (15 Hours)

- UV-Vis Spectroscopy
- Electrical Measurements (I-V Characterization)
- Structural & Optical Analysis
- Advanced Techniques (Electrochemical Workstation)



### 4 DEVICE FABRICATION (10 Hours)

- Fabrication of Energy Devices
- Sensors & Nanoelectronic Components
- Smart Material Applications



### 5 INNOVATION & MINI PROJECT (10 Hours)

- Hands-on Group Project
- Prototype Development
- Presentation & Evaluation

## ★ KEY HIGHLIGHTS



Hands-on training with advanced instruments



Real research experience in cutting-edge areas



Mini project & Certificate for all participants



Interaction with experts



Enhance skills for higher studies & industry



Best Project Award for top performers



### WHO CAN APPLY?

UG/ PG Science,  
Engineering,  
and Biomedical Students

## PROGRAM DETAILS



**DURATION**  
60 Hours



**SCHEDULE**  
1st-10th July 2026



**TIME**  
10:00 AM – 6:00 PM  
(Monday to Friday)



**VENUE**  
SurTech Campus  
Kolkata

### SCAN TO REGISTER



<https://forms.gle/bVoMDWYy5Rao8nbLA>

### COURSE FEE

₹ 3000/-

(Inclusive of Materials & Certificate)

### LAST DATE FOR REGISTRATION



27th June 2026

### ACCOMMODATION AVAILABLE



### LIMITED SEATS AVAILABLE



FIRST COME,  
FIRST SERVED!

## IN ASSOCIATION WITH



Materials Research  
Society of India,  
Kolkata Chapter



Society for Materials Chemistry,  
Kolkata Chapter



Indian Photobiology Society,  
JU, Kolkata



Sripat Singh College,  
Murshidabad



Subhami Biopharma Pvt. Ltd.,  
Kolkata



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

### CONTACT US

Coordinator: Dr Biswajit Das  
Co-coordinator: Dr Dipankar Das

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🌐 <https://www.surtech.edu.in/>

# Next-Gen Nanoelectronics & Smart Energy Systems: HANDS-ON SUMMER INTERNSHIP 2026



## Expertise Topics

### 1. KEY HIGHLIGHTS

#### What You Will Learn (Hands-on)

-  **Nanomaterials Synthesis**  
(Chemical & Physical Methods)
-  **Thin Film Deposition**  
(Spin Coating, Evaporation)
-  **Material Characterization**  
(UV-Vis, Electrical, Structural)
-  **Smart Energy Materials & Devices**
-  **Nanoelectronics & Sensor Devices**
-  **Device Fabrication & Testing**
-  **Hydrogen & Renewable Energy Basics**
-  **Data Analysis & Research Methodology**
-  **Mini Project & Innovation**


 **Certificate, Kit & Expert Interaction for All Participants**

### 2. Resource Persons



#### Prof (Dr) Kalyan Kumar Chattopadhyay

Professor,  
Thin Film and Nanoscience Laboratory, Department of Physics  
School of Materials Science and Nanotechnology,  
Jadavpur University, Kolkata - 700 032

 **Nanomaterials Synthesis & Thin Film Growth**



#### Prof (Dr.) Chittaranjan Sinha

Professor, Department of Chemistry,  
Jadavpur University,  
Kolkata-700 032, India

 **Energy Storage & Green Hydrogen Technologies**



#### Dr. Srabanti Ghosh

Principal Scientist, Energy Materials & Devices Division (EMDD),  
CSIR - Central Glass and Ceramic Research Institute,  
Raja S. C. Mullick Road, Jadavpur, Kolkata, 700032, India

 **Energy Materials & Electrode Fabrication**



#### Prof. (Dr.) Debnarayan Jana


Professor, Department of Physics  
University of Calcutta

 **DFT & Computational Materials Science**



#### Prof. (Dr.) Jyotsna Kumar Mandal

Professor  
Dept. of Computer Science and Engineering  
Kalyani University, Kalyani, India  
(Former Vice Chancellor, Raiganj University, Raiganj, India.)

 **Computational Methods & Simulations**



#### Dr. Shirshendu Chakraborty

Scientist E, Advanced Ceramics & Composites Division  
CSIR-Central Glass & Ceramic Research Institute,  
Kolkata- 32

 **Advanced Materials Characterization Techniques**



#### Prof. (Dr.) Debashis De

Professor, Department of Computer Science & Engineering  
Maulana Abul Kalam Azad University of Technology,  
West Bengal, India

 **AI, ML & Neuromorphic Smart Computing**

### 3. COORDINATOR & CO-COORDINATOR



#### Dr. Biwajit Das

Coordinator

Dr. Sudhir Chandra Sur Institute  
of Technology and Sports Complex

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Mobile: +91 9836288680





#### Dr. Dipankar Das

Co-Coordinator

Dr. Sudhir Chandra Sur Institute  
of Technology and Sports Complex


Email: [hod\\_bsh@dsec.ac.in](mailto:hod_bsh@dsec.ac.in)

Mobile: +91 9748313603


-  **Duration:** 1st - 10th July 2026 (60 Hours)
-  **Time:** 10:00 AM - 6:00 PM
-  **Venue:** SurTech Campus, Kolkata
-  **Course Fee:** ₹3000/-
-  **Limited Seats - First Come, First Served!**

### 4. ABOUT US


#### ABOUT THE BSH DEPARTMENT

 The Department of Basic Science & Humanities (BSH) at SurTech is committed to excellence in teaching, research, and skill development. We foster interdisciplinary learning and innovation through modern laboratories, student-centric programs, and research-driven initiatives.

#### ABOUT SURTECH COLLEGE

 SurTech (Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex) (Autonomous) is a NAAC A-accredited institution under JIS Group, ranked among Top 250-300 in NIRF. We are dedicated to academic excellence, innovation, and holistic development of students.

#### ABOUT NEST LAB

 The Nanoelectronics for Energy and Smart Technologies (NEST) Lab is equipped with advanced instruments for materials synthesis, device fabrication, and characterization. It supports cutting-edge research in nanoelectronics, smart energy systems, and emerging technologies.

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