

Report on

Inaugural Session of Q_{∞} (Q-Infinity) Quantum Lecture Series

“Quantum Technologies from Two Quantum Revolutions: What Exists & What’s in Progress”

Jointly Organized by

**Department of Basic Science & Humanities,
Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex,
(Sur Tech),(Autonomous) JIS Group, Dum Dum
&
CSIR-Central Glass & Ceramic Research Institute (CSIR-CGCRI), Kolkata**

**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**

Title: Q_{∞} (Q-Infinity) Quantum Lecture Series on “Quantum Technologies from Two Quantum Revolutions: What Exists & What’s in Progress”

Date: September 25, 2026

Mode: Online

No. of participant: 262

Time: 8 PM – 10 PM

Introduction:

The Department of Basic Science & Humanities (BSH), Dr. Sudhir Chandra Sur Institute of Technology and Sports Complex (SurTech), JIS Group, Kolkata and CSIR-Central Glass & Ceramic Research Institute (CSIR-CGCRI), Kolkata, launched jointly a new academic initiative entitled **Q_{∞} (Q-Infinity) – Quantum Lecture Series: “Limitless Possibilities of Quantum Science.”**

The inaugural session of the lecture series was organized online on **25 September 2026 from 8:00 PM to 10:00 PM IST**, marking the beginning of a continuing academic platform dedicated to the rapidly developing field of quantum science and technology.



SurTech

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

The Q_{∞} Lecture Series has been conceived as a regular knowledge-sharing and interaction platform bringing together **scientists, researchers, academicians, faculty members, students, industry professionals and quantum enthusiasts**. The series aims to create awareness and promote meaningful academic discussions on emerging areas including **quantum science, quantum computing, quantum materials, quantum technologies and their applications**.

The initiative also seeks to develop a vibrant quantum research culture and collaborative ecosystem, particularly among students and young researchers, while facilitating interaction with leading experts from academia, research institutions and industry.

Objectives: The Q_{∞} (Q-Infinity) Quantum Lecture Series was initiated with the following objectives:

- To provide students, researchers and faculty members with exposure to the rapidly developing field of quantum science and technology.
- To create a regular platform for interaction with eminent scientists and researchers working in quantum science and related areas.
- To promote awareness about **quantum computing, quantum materials, quantum technologies and emerging quantum applications**.
- To encourage interdisciplinary academic and research interaction among Physics, Chemistry, Materials Science, Engineering, Computer Science and allied disciplines.
- To introduce young researchers and students to contemporary developments and future opportunities in quantum technology.
- To facilitate academic and research networking among institutions, scientists and industry professionals.
- To encourage collaborative research, joint projects, publications and future academic initiatives.
- To create awareness regarding emerging career and research opportunities in the quantum technology ecosystem.
- To strengthen the academic association between SurTech, CSIR-CGCRI and the participating partner institutions.
- To establish Q_{∞} as a continuing platform for knowledge exchange and collaborative exploration of the **limitless possibilities of quantum science**.

Inaugural Ceremony:

The inaugural session commenced with a formal welcome to the invited speaker, esteemed guests, participating academicians, researchers, faculty members, students and quantum enthusiasts.

The programme marked the formal launch of Q_{∞} – **Quantum Lecture Series**, jointly initiated by the **Department of Basic Science & Humanities, SurTech and CSIR-CGCRI, Kolkata**, with the support and association of the collaborating academic and institutional partners.



SurTech

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

The inaugural session highlighted the importance of developing a strong academic and research ecosystem in quantum science and technology. The organizers emphasized the need for regular interaction between established researchers and young learners so that students and researchers can understand both the fundamental concepts and emerging applications of quantum technologies.

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
- **President, Q ∞ Quantum Lecture Series**
Dr. Srabanti Ghosh, Principal Scientist, CSIR-CGCRI, Kolkata
- **Secretary, Q ∞ Quantum Lecture Series**
Dr. Dipankar Das, Head of the Department, BSH, SurTech
- **Joint Secretary, Q ∞ Quantum Lecture Series**
Dr. Biswajit Das, Asst. Professor, BSH, SurTech

Eminent Speakers

Sl. No.	Name	Designation	Institute / Organization
1	Prof. Bhupendra Nath Dev	Professor	Centre for Quantum Engineering, Research and Education (CQuERE), TCG-CREST, Kolkata

Prof. Dev has extensive academic and research experience in the field of quantum science and technology, with academic associations with premier research and educational institutions including IIT and IACS.

His research and academic engagement in the emerging quantum technology ecosystem provided valuable perspectives on the development of quantum science in India. He is also associated with the development of West Bengal's first indigenous quantum-computing initiative involving a physical 5-qubit superconducting quantum system with a dilution-refrigeration platform.

Programme Highlights

- Formal launch of **Q ∞ (Q-Infinity) – Quantum Lecture Series**.
- Inaugural lecture by eminent quantum scientist **Prof. Bhupendra Nath Dev**.
- Expert interaction on contemporary developments in quantum science and technology.
- Discussion on the emerging landscape of **quantum computing and quantum technologies**.



SurTech

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

- Exposure of students and young researchers to current developments in quantum research.
- Participation of academicians, faculty members, researchers, students and quantum enthusiasts.
- Establishment of a continuing platform for monthly academic interaction.
- Strengthening of academic association between **SurTech and CSIR-CGCRI**.
- Provision of **e-certificates to registered participants**.
- Promotion of future academic, research and collaborative activities in quantum science.

Programme Outcome:

The major outcomes of the programme were:

- Enhanced awareness regarding recent developments in emerging areas of science and technology.
- Exposure of students and young researchers to international and national research perspectives.
- Increased interest in interdisciplinary research.
- Identification of potential areas for joint research and collaboration.
- Promotion of interaction between academic institutions, researchers and industry.
- Awareness regarding Ph.D., research and funding opportunities.
- Possibilities for joint publications and collaborative research projects.
- Promotion of faculty and student exchange programmes.
- Strengthening of academic and research networking between Indian and international experts.

About Contributing Participant:

A total of 262 including 51 Assistant Professor, 15 Associate Professor, 2 Professor, 21 Ph.D scholar, 4 Scientist and 169 UG and PG students across India and abroad like CNRS, Université Paris-Saclay, Jawaharlal Nehru Centre for Advanced Scientific Research ,CSIR–Central Glass and Ceramic Research Institute, TIFR, Mumbai , IIT Indore, Indian Association for the Cultivation of Sciences, Indian Institute of Engineering Science and Technology, Jadavpur University , IIIT Kalyani , S. N. Bose National Centre for Basic Sciences ,CSIR–National Physical Laboratory, Indian Institute of Technology Jodhpur, Central University of Himachal Pradesh , BITS Pilani, Hyderabad , Pt. Ravishankar Shukla University, Raipur ,Amity University, Lucknow, Netaji Subhash University of Technology, SRM University,Sri Venkateswara College of Engineering, St. Xavier's College, Kolkata , MITS School of Engineering , M. S. Ramaiah Institute of Technology , GIFT Autonomous, Bhubaneswar , Tribhuvan University ,Chhatrapati Shahu Ji Maharaj University , Vidyasagar University , Narayana Engineering College, Nellore , Diamond Harbour Women's University ,Rajendra Mishra College , Netaji Subhas Institute of Technology, Bihta, Patna , C. Abdul Hakeem College of Engineering and Technology , Vedanta College , Techno India University , Sir Parashurambhau College, Pune , BPHE Society's Ahmednagar College , MITS School of Engineering , Bhairab Ganguly College ,Maulana Abul Kalam Azad University of Technology and all JIS sister institution attended this talk to explore future collaboration, research publications, joint projects and academic interaction with institutions and experts from India and abroad.

Acknowledgement:



SurTech

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

The Department of Basic Science & Humanities (BSH), SurTech, expresses its sincere gratitude to **Sardar Taranjit Singh, MD, JIS Group; Sardar Simarpreet Singh, Director, JIS Group; Prof. (Dr.) Saradindu Panda, Principal, SurTech; Dr. Soumen Basu, Registrar, SurTech**, and also honourable **Director, CSIR-Central Glass & Ceramic Research Institute (CSIR-CGCRI), Kolkata**, which contributed significantly to the conceptualization and establishment of the Q_{∞} Quantum Lecture Series.

The organizers extend their sincere appreciation to **Prof. Bhupendra Nath Dev**, Centre for Quantum Engineering, Research and Education (CQuERE), TCG-CREST, Kolkata, for delivering the inaugural lecture and sharing his valuable knowledge, research perspectives and insights into the emerging quantum technology landscape.

Special thanks are extended to all the collaborating organizations **Society for Materials Chemistry, Kolkata Chapter, MRSI Kolkata Chapter, Indian Photobiology Society, Jadavpur University Campus, Sripat Singh College, Murshidabad, Subhami Biopharma Pvt. Ltd., Kolkata and People's Association for Science and Environment (PASE), Kolkata** for their support and association.

The organizers also acknowledge the efforts of the faculty members, research scholars, students, technical and supporting staff, and all members of the organizing team whose collective efforts contributed to the successful launch of the Q_{∞} Lecture Series.

Vote of Thanks: Sincere gratitude was expressed to **Prof. Bhupendra Nath Dev, CQuERE, TCG-CREST, Kolkata**, for his insightful and inspiring inaugural lecture by Dr Dipankar Das. Special appreciation was extended to **Dr. Srabanti Ghosh, Principal Scientist, CSIR-CGCRI and President of Q_{∞}** , for her vision, guidance, and continuous support in initiating the lecture series.

The organizers also acknowledged the valuable support of all **association partners**, faculty members, researchers, students, organizing team members, and participants who contributed to the success of the programme.

Conclusion: The inaugural session of Q_{∞} (**Q-Infinity**) – **Quantum Lecture Series: “Limitless Possibilities of Quantum Science”**, held on **25 September 2026**, marked a significant academic initiative of the **Department of Basic Science & Humanities, SurTech**, in association with **CSIR-CGCRI, Kolkata**.

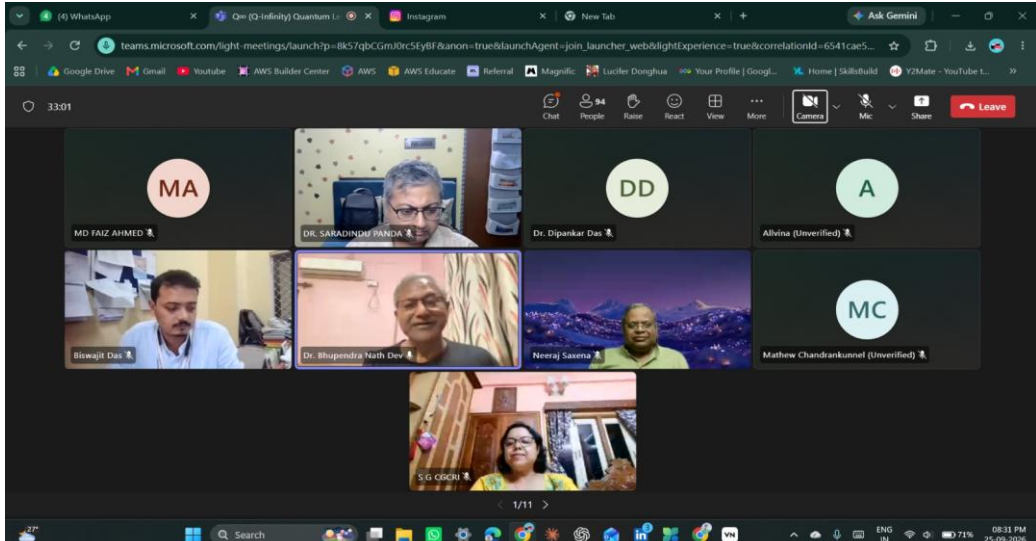
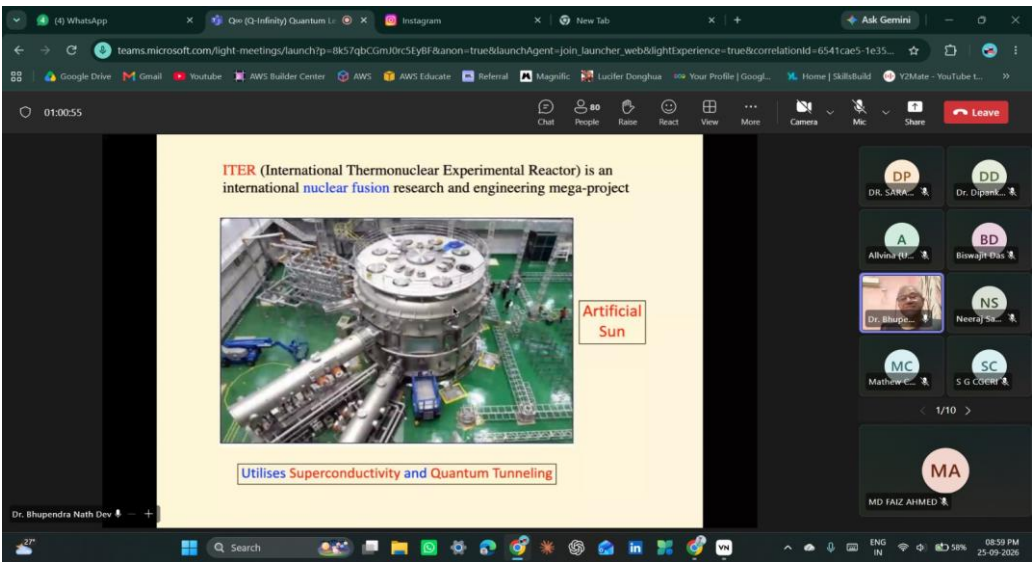
The inaugural lecture by **Prof. Bhupendra Nath Dev, CQuERE, TCG-CREST, Kolkata**, provided participants with valuable exposure to the rapidly developing field of quantum science and technology. The Department of Basic Science & Humanities, SurTech, in association with CSIR-CGCRI and its academic partners, remains committed to continuing the Q_{∞} Lecture Series through regular expert lectures and interactions, thereby encouraging scientific curiosity, research innovation, interdisciplinary collaboration and knowledge exchange. The session concluded with the hope that Q_{∞} – **Quantum Lecture Series** would continue to foster knowledge sharing, meaningful discussions, academic collaborations, and greater interest in the emerging field of quantum science.

Glimpses of the Event:



Q^∞ (Q-Infinity) Quantum Lecture Series

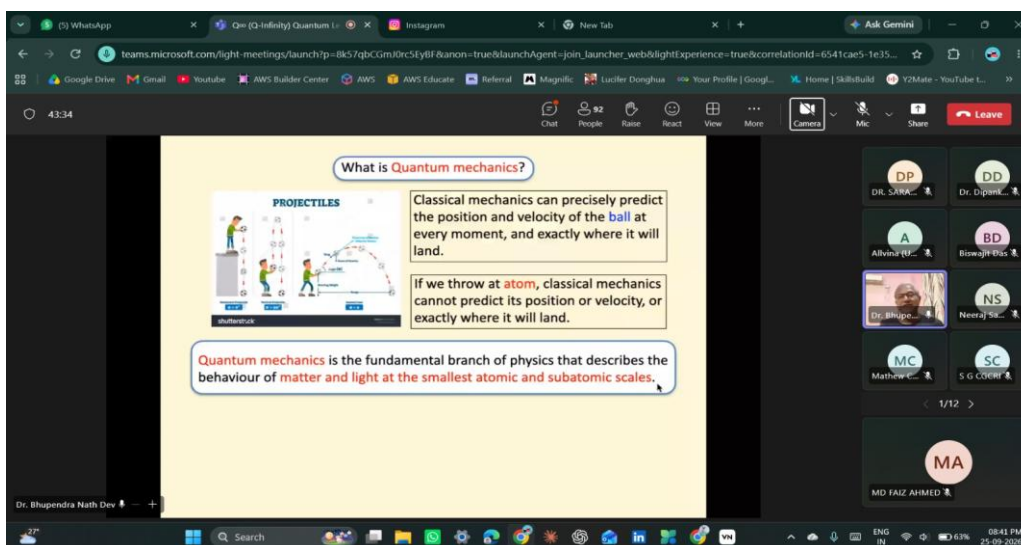
(25.09.2026)

Jointly Organized by
Department of Basic Science & Humanities, SurTech &
CSIR-Central Glass & Ceramic Research Institute (CSIR-CGCRI), Kolkata



Q^∞ (Q-Infinity) Quantum Lecture Series (25.09.2026)



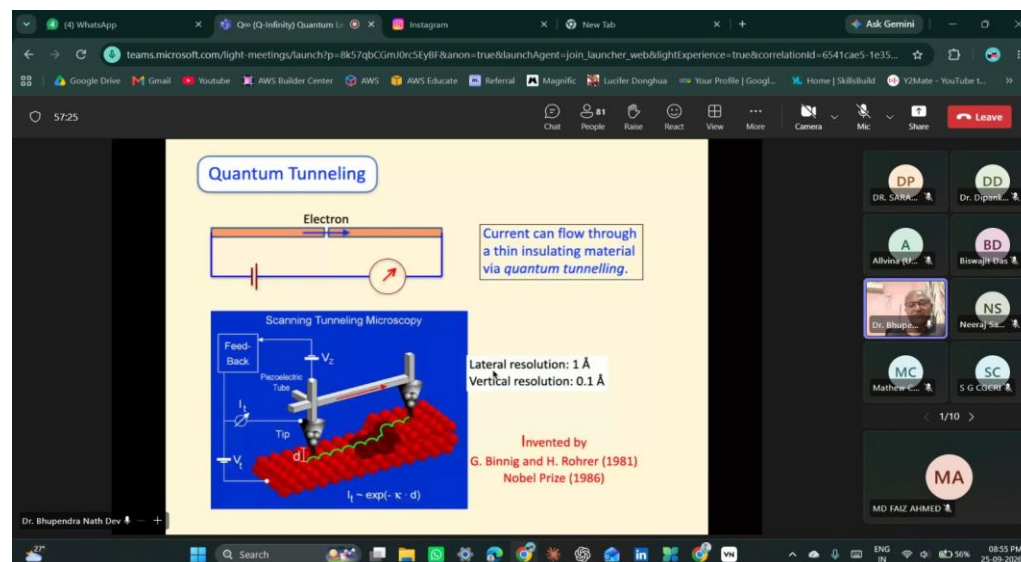
What is Quantum mechanics?

PROJECTILES

Classical mechanics can precisely predict the position and velocity of the ball at every moment, and exactly where it will land.

If we throw an atom, classical mechanics cannot predict its position or velocity, or exactly where it will land.

Quantum mechanics is the fundamental branch of physics that describes the behaviour of matter and light at the smallest atomic and subatomic scales.



Quantum Tunneling

Electron

Current can flow through a thin insulating material via quantum tunnelling.

Scanning Tunneling Microscopy

Feed-Back
Piezoelectric Tube
Tip
 V_z
 V_t
 dI
 $I_t = \exp(-\kappa \cdot d)$

Lateral resolution: $1 \text{ \AA}$
Vertical resolution: $0.1 \text{ \AA}$

Invented by
G. Binnig and H. Rohrer (1981)
Nobel Prize (1986)

Jointly Organized by
Department of Basic Science & Humanities, SurTech &
CSIR-Central Glass & Ceramic Research Institute (CSIR-CGCRI), Kolkata

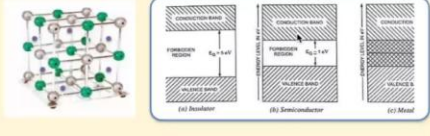


Q[∞] (Q-Infinity) Quantum Lecture Series (25.09.2026)

What is Quantum Technology?
All technologies developed by applying the rules of **quantum mechanics** belong to Quantum Technology.

Felix Bloch (1929) - Quantum description of solids:
Bloch proved a theorem that allowed the description of the behaviour of electrons in the periodic structure of crystalline solids. His theory offered the basis for the concept of **electronic band structures of semiconductors**.

How do electrons behave in a solid material?

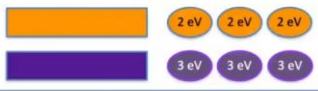


Dr. Bhupendra Nath Dev

Objective: To create awareness and promote deeper understanding of Quantum Science and Technologies.

Quantum Science

1900: Max Planck
Light or energy is not continuous
They are delivered in discrete amounts (quantum of light)



Dr. Bhupendra Nath Dev

Jointly Organized by
Department of Basic Science & Humanities, SurTech &
CSIR-Central Glass & Ceramic Research Institute (CSIR-CGCRI), Kolkata