



10th Mar, 2025

**A
REPORT
ON
INTERNATIONAL CONFLUENCE
ON
QUANTUM SCIENCE & TECHNOLOGY
(ICQST-2025)**

ORGANIZED BY

**Faculty of Applied Sciences
in association with IQAC & IIC
SARALA BIRLA UNIVERSITY
BIRLA KNOWLEDGE CITY, MAHILONG, RANCHI**

BACKGROUND OF THE INTERNATIONAL CONFLUENCE

The International Confluence on Quantum Science and Technology (ICQST-2025) was organized by Faculty of Applied sciences, SBU Ranchi in association with Internal Quality Assurance Cell (IQAC) and Institute Innovation Council (IIC) on 10th March, 2025. This confluence has covered the latest research and developments happened in the areas of Quantum Physics, Quantum Computing etc

REPORT OF THE INTERNATIONAL CONFLUENCE



The confluence started with registration procedure near to G. D. Birla auditorium on 10.03.2025. Registration of participants was done between 10:00–11:00 am. Inaugural function was started at 11 am hosted by **Dr. Priyanka Srivastava**, Assistant professor, Department of CSE & CA. Inaugural function began with the lighting of the lamp and the university Kulgeet by the dignitaries.



Dr. Priyanka Srivastava

welcomed all the guests present for the inaugural function. The dignitaries present for the inaugural function were honorable chief guest, Prof. (Dr.) Gopal Pathak, Hon'ble Director General, SBU, guest of honour was Prof. C. Jeganathan, Hon'ble Vice Chancellor, SBU, Respected keynote

speaker, Dr. Alok Chaturvedi, Professor, Department of Computer Science, Purdue University, United States and Dr. Kuntal Mukherjee, Assistant Professor, Department of CSE, BIT (Lalpur Unit), Dr. Pankaj K. Goswami, Dean, Faculty of Engineering & Applied Sciences.



Dr. Pankaj K. Goswami, Dean of Engineering and Applied Sciences, SBU Ranchi delivered the welcome address where he welcomed all the respected dignitaries, faculty members and participants. He explained the meaning of quantum and further discussed the importance of the confluence theme for the development of science & technology. He also highlighted that a national mission has been launched by Indian government with the proposal to invest Rs 8000 crores to boost research and development in the national quantum mission (NQM) in India. At last, he concluded his address by briefly presenting the preamble of the confluence wherein he emphasized the fact that the confluence stands as a platform to bring together the researchers in the field of quantum science & technology for the benefit of society.



Hon'ble Vice Chancellor, Prof. C. Jeganathan, Sarala Birla University delivered the presidential remarks. He mentioned various dimensions of the development of quantum computing and explained how quantum science is used in daily life applications like transistors, the semiconductor industry, etc. He further

discussed the challenges that come in building quantum computing. At last, he wished that the ICQST-2025 may give a greater insight for the researchers working in the field of quantum science and technology.

TECHNICAL SESSION -1



The technical session-1 was started at 11.35 PM in the G. D. Birla Auditorium of Sarala Birla University. The technical session began with the invited talk of Hon'ble Director General, **Prof. (Dr.) Gopal Pathak, Sarala Birla University**. He delivered his talk on "Introduction to Quantum Science & Technology". He has

discussed different terminologies of quantum physics. He further discussed possible connections between the classical and quantum theory with several applications in MRI, Telepathy, Quantum computers etc.



The session continued with the second invited talk delivered by **Dr. Kuntal Mukherjee**, Assistant Professor, Department of CSE, BIT Extension Centre, Lalpur, Ranchi. He delivered talk on "Quantum Computing, Application of IBM Qiskit". He has discussed about quantum world, quantum machine

learning, superposition, tunneling etc. Additionally, he also discussed Quantum information software kit (QISKIT) with future applications of quantum computing.

TECHNICAL SESSION -2



Technical session-2 was started at 2:00 PM and hosted by Dr. V.N Lakshmi Durga, Assistant Professor, Department of Mechanical Engineering. She started the Technical with the introduction and felicitation of respected keynote speaker Dr. Alok Chaturvedi, Professor, Department of Computer Science, Purdue University. The keynote address was followed by the poster presentation session.



Dr. Alok Chaturvedi, Professor, Department of Computer Science, Purdue University delivered his keynote address on “Quantum Decision-Making: Decoding Biases and Paradoxes with Quantum Computing”. He discussed the an overview of classical and quantum decision theories and their limitations of

quantum computing. He further explains how phenomena such as the Allais and Ellsberg paradoxes highlight the need for more sophisticated models. At last, he discussed the role of explainable AI in interpreting complex model behaviors, thereby guiding further refinements in quantum computing.

The list of participants contributed for the poster presentation in ICQST-2025 is mentioned below:

S. N.	Paper Title with presenting Author
1.	Nanorobots Oscillator- Aaisha Parveen, Anshu Kumar
2.	Material Science and Quantum Physics- Kumar Ashutosh

3.	IoT based solar power monitoring and data logger system – Uttam Kumar & Rima Kumari
4.	Quantum Optics - Jayalakshmi
5.	Quantum Mechanics- Ankita Mishra
6.	Atomic Clock – Rizwan Alam
7.	Black hole- Ayush Kumar Singh & Keshav Kumar
8.	Black body radiation- Akancha Keshri & Shruti Jha



Valedictory Session



Finally, the report presentation of ICQST-2025 was done by Dr. Pintu Das, Assistant Professor, Department of Mathematics, SBU Ranchi. The best poster session award of the ICQST-2025 was given two young minds:

1. IoT based Solar Power Monitoring & Data Logger System by **Uttam Kumar & Rima Kumari**.
2. Nanorobots by **Aaisha Parveen & Anshu Kumar**.



The valedictory session came to its end with a warm expression of gratitude by **Dr. Nitya Garg**, Assistant Professor, Department of Physics wherein she thanked each and every person involved directly and indirectly in organising ICQST-2025 and making this event a grand success.

In this one day ICQST-2025 three speakers from different institutes and more than 10 participants (external -1, internal -9) were participated.



Media Coverage

एसबीयू में क्वांटम साइंस और तकनीक पर हुआ सम्मेलन



संवाददाता। सोना न्यूज, नामकुम (राँची)

बबलू मुशताक

एसबीयू के फैकल्टी ऑफ एप्लाइड साइंसेज द्वारा आईक्यूएसी और आईआईसी के सहयोग से आज क्वांटम साइंस और तकनीक पर विवि सभागार में अंतर्राष्ट्रीय सम्मेलन का आयोजन किया गया। इसमें अपने उद्गार व्यक्त करते हुए परड्यू विश्वविद्यालय, अमेरिका के डॉ. आलोक आर. चतुर्वेदी ने क्वांटम डिजीजन थ्योरी पर अपनी बातें रखी। उन्होंने क्लासिकल थ्योरी की तुलना में क्वांटम थ्योरी को सर्वव्यापी बताया। इस संदर्भ में उन्होंने शेयर मार्केट का भी उदाहरण दिया। उन्होंने वृहत् परिप्रेक्ष्य में क्वांटम कंप्यूटिंग के इस्तेमाल पर भी प्रकाश डाला। कार्यक्रम में बीआईटी लालपुर सेंटर के डॉ. कुंतल मुखर्जी ने क्वांटम वर्ल्ड की खूबियों और कार्यप्रणाली पर अपना विचार रखा। उन्होंने क्वांटम मशीन लर्निंग, सुपरपोजिशन और क्वांटम इनफॉर्मेशन सॉफ्टवेयर कीट के विषय में विस्तार से बताया। कार्यक्रम में बोलते हुए सरला बिरला विश्वविद्यालय के माननीय महानिदेशक प्रो गोपाल पाठक ने क्वांटम मूवमेंट और दूसरे अणुओं से इसकी भिन्नता पर चर्चा की। उन्होंने आज के दौर में इसके इस्तेमाल पर जानकारी देते हुए भौतिक विज्ञान समेत अन्यान्य क्षेत्रों में इसके उपयोग पर भी अपनी बात कही। टेलीपैथी और एमआरआई का उदाहरण देते हुए उन्होंने इसके दूरगामी इस्तेमाल की बात की। विवि के माननीय कुलपति प्रो सी जगनाथन ने क्वांटम विज्ञान के विभिन्न आयामों के बारे में बताया। उन्होंने इसकी आवश्यकता पर अपना विचार प्रस्तुत किया। उपस्थित श्रोताओं के समक्ष सेमी कंडक्टर फिजिक्स की उत्पत्ति पर भी उन्होंने बात की। कार्यक्रम के समापन सत्र में डॉ. पिंटू दास ने सम्मेलन से संबंधित अपना रिपोर्ट प्रस्तुत किया। इस अवसर पर पोस्टर प्रस्तुति प्रतियोगिता में विजेताओं को पुरस्कार प्रदान किए गए। स्वागत भाषण डीन डॉ. पंकज गोस्वामी एवं धन्यवाद प्रस्ताव डॉ. नित्या गर्ग ने दिया। इस अवसर पर एसबीयू के शिक्षकगण एवं विद्यार्थी बड़ी संख्या में उपस्थित रहे। इस कार्यक्रम के आयोजन पर विश्वविद्यालय के प्रतिकुलाधिपति माननीय बिजय कुमार दलान एवं माननीय राज्यसभा सांसद डॉ प्रदीप कुमार वर्मा ने अपनी शुभकामनाएं प्रेषित की।