

On account of World Quantum Day being celebrated globally on 14th April 2025, the Quantum Quorum, Physics Society of Guru Tegh Bahadur Institute of Technology (GTBIT), successfully hosted QUBIT X, a dynamic three-day hybrid event with its finale held on 11th April 2025. This event brought together the exciting fields of quantum computing and innovative problem-solving.



The event was coordinated by DR. Daljeet Kaur, Associate professor and teacher in charge of the Quantum Quorum Society, under the guidance and support of Chairman, S. Amarjeet Singh; Manager, S. Harjeet Singh; Director, DR. Rominder Kaur; senior-most physics faculty Prof. Simmi Singh; and Head of the Department (Applied Sciences), DR. Parsan Kaur. The event kicked off with a two-day online round of ideation, PowerPoint presentation submission in which 60 teams from all over the country participated and through an intense judging section top 12 were shortlisted. The third and final day started with an intellectually stimulating Quantum Computing Workshop, which attracted over 100 participants eager to explore the potential of quantum technologies. The workshop introduced attendees to the fascinating principles behind quantum computing—superposition, entanglement and quantum gates. Through engaging demonstrations and real-world applications, participants discovered how quantum algorithms, like Shor’s algorithm for factoring and Grover’s algorithm for search, have the potential to revolutionize industries such as cryptography, artificial intelligence and material science.

The session was conducted by the distinguished Dr. Ashok Kumar, a name that resonates in the academic and scientific community. Dr. Kumar's remarkable journey began at IIT Kanpur, where he completed his M.Sc. in Physics in 1989, followed by an M.A. in Physics from Johns Hopkins University. His doctoral work in Solar and Space Physics further added to his expertise. Over the years, he has participated in significant projects, including an expedition to the U.S. McMurdo base in Antarctica and holds a patent for a stable ultrasonic sonicator. Dr. Kumar’s career has spanned prestigious institutions like Stanford University, Harvard Medical School and Sharda University, where he currently serves as a Professor of Physics. His workshop not only provided valuable insights into the world of quantum computing but also inspired the audience to explore the broader impacts of quantum technologies.



Following the workshop, the focus shifted to the QUBIT X Ideathon, where the challenge was to solve real-world problems using the themes of Physics and Quantum Computing. Over 50 teams entered the competition and after a rigorous evaluation, 12 teams made it to the final round. These teams showcased their innovative prototypes, each addressing challenges in various fields by leveraging physics principles and quantum computing. The Ideathon also brought an added layer of expertise with the presence of Dr. Jaspal Singh, a distinguished scientist with a wealth of experience in nanoscience and quantum research. Dr. Singh has worked at institutions like IIT Delhi and Sungkyunkwan University, South Korea and his research in plasmonic nanocomposites, TMDCs and optical properties has garnered him recognition as one of the world's top scientists. Dr. Singh's feedback and insights were crucial in evaluating the teams' projects and his presence added a great deal of depth to the event.

The Ideathon featured an impressive range of projects.

The first position was acquired by team KAJU KATLI, from Maharaja Agrasen Institute of Technology, which created an innovative quantum computing model that computes bond

lengths and atomic properties, offering a glimpse into the future of chemical analysis and material research.

The second position went to the team HACK A LEV, of Guru Tegh Bahadur Institute of Technology, which was based on physics principles such as electromagnetic field sensing and wave propagation to tackle real-world problems in agriculture, focusing on soil health and crop monitoring.

The third position went to team, HADN'T, of Guru Tegh Bahadur Institute of Technology. They developed a quantum mechanics-based game that used principles like superposition and quantum tunneling, offering a fun and educational way to understand complex quantum concepts. To encourage the enthusiastic efforts of the young engineers, first prize of Rs. 4000/- cash plus a gift voucher worth rupees 1000/-, second prize of Rs 3000/- cash and third prize of Rs. 2000/- cash was awarded to the winners.