



# INTERNATIONAL WORKSHOP ON “QUANTUM MATHEMATICS AND IMAGING FOR SMART MANUFACTURING AND INDUSTRY 4.0” - QMI 2025 (HYBRID MODE)

15-19, DECEMBER 2025

Organized by

Department of Mathematics, School of Advanced Sciences  
Vellore Institute of Technology, Chennai - 600 127, Tamil Nadu, India

## ABOUT VIT CHENNAI

VIT Chennai was established in 2010 and has since become a beacon of excellence in higher education. Spearheaded by Vice-President Dr. G. V. Selvam, a pioneering visionary who laid the foundation of VIT Chennai, he is an insightful architect of its evergreen campus and an ingenious leader whose comprehensive vision and mission have shaped its growth. Under his guidance, VIT Chennai has rapidly evolved into a hub of innovation and academic distinction. The leadership team, including Vice-Chancellor Dr. V. S. Kanchana Bhaaskaran, Pro-Vice Chancellor Dr. T. Thyagarajan, Director Dr. K. Sathiyarayanan and Additional Registrar Dr. P. K. Manoharan, drives its mission of delivering transformative education and impactful research. Strategically located in the capital city of Tamil Nadu, VIT Chennai is a globally engaged, competitive, and research-enriched institution. VIT Chennai proactively addresses industrial, social, economic and environmental challenges, fostering application-based learning that produces industry-ready professionals. Known for its cosmopolitan atmosphere, VIT Chennai attracts students from across the globe, fostering a vibrant and multicultural community. Committed to maximizing industrial connectivity and establishing Centers of Excellence in cutting-edge research areas, VIT Chennai enriches technological and managerial human capital through a collaborative and inclusive academic environment. It serves as a platform for intellectual exchange, encouraging the convergence of diverse ideas to drive innovation and learning. Dedicated to societal and industrial advancement, VIT Chennai leverages its resources to benefit the community, supports national knowledge-building initiatives and fosters international collaborations for mutual progress in research and education. With a clear vision and an unwavering mission, VIT Chennai continues to redefine the landscape of higher education in India and beyond.

## ABOUT SAS

The School of Advanced Sciences (SAS) at Vellore Institute of Technology (VIT) Chennai, comprises Department of Mathematics, Physics and Chemistry. It offers the following programmes:

- Ph.D
- M.Sc Data Science, M.Sc Physics, M.Sc Chemistry

The school also offers a plethora of core and elective courses facilitating B.Tech, M.Tech, MCA, Integrated M.Tech, Management and Law programmes.

## ABOUT QMI-2025

MI-2025 is an international five-day workshop dedicated to advancing the integration of quantum mathematics and imaging technologies in the context of Smart Manufacturing and Industry 4.0. The title ‘QMI’ highlights the convergence of mathematical foundations, quantum-inspired techniques, and imaging innovations, fostering interdisciplinary collaboration across science, engineering, and industrial domains. Designed as a synergy of theory and practice, the workshop provides a platform to explore the transformative role of quantum mathematics and cutting-edge imaging in enabling intelligent, efficient, and sustainable manufacturing systems. Participants will gain in-depth insights into theoretical frameworks, computational tools, and industrial applications, while also engaging with emerging trends and future directions. QMI-2025 aspires to spark innovation, inspire cross-disciplinary research, and empower attendees to contribute to the evolving landscape of Industry 4.0 through the lens of quantum mathematics and imaging.

## TOPICS TO BE COVERED

- Fundamentals of Image Processing and Machine Learning
- Introduction to Quantum Computing with Hands-on Training
- Quantum Algorithms and their Mathematical Foundations
- Quantum Image Processing and Representation
- Quantum Cryptography and Security for Industry 4.0

## AWARDS

To encourage active participation, a daily quiz will be conducted at the end of each day’s sessions. Participants’ scores will be consolidated, and on the final day, the top three performers will be recognized with prestigious awards:

- 1 **First Prize – QMI Excellence Award**
- 2 **Second Prize – QMI Distinction Award**
- 3 **Third Prize – QMI Merit Award**

Winners will receive mementos and certificates of recognition during the valedictory session

## ELIGIBILITY CRITERIA

The workshop is open to postgraduate students, research scholars, faculties and industry professionals from central/state/private/international academic institutions/ colleges/ universities with an interest in quantum computing.

## ACCOMMODATION

Accommodation shall be provided only to the outstation participants on prior request within the campus at nominal charges.

## IMPORTANT DATES

Opening Date for Registration - 01/11/2025  
Last Date for Early-Bird Registration - 20/11/2025  
Last Date for Late Registration - 22/11/2025

## CHIEF PATRON

**Dr. G. Viswanathan** - Founder & Chancellor, VIT

## PATRONS

**Mr. Sankar Viswanathan** - Vice President, VIT  
**Dr. Sekar Viswanathan** - Vice President, VIT  
**Dr. G.V. Selvam** - Vice President, VIT  
**Dr. V. S. Kanchana Bhaaskaran** - Vice Chancellor, VIT  
**Dr. T. Thyagarajan** - Pro-Vice Chancellor, VIT Chennai

## CONVENOR

**Dr. N. Ramesh Babu** - Assistant Professor, VIT Chennai  
Email: [n.rameshbabu@vit.ac.in](mailto:n.rameshbabu@vit.ac.in), Mobile: +91 8778097050

## CO-CONVENORS

**Dr. S. Harshavarthini** - Assistant Professor, VIT Chennai  
Email: [harshavarthini.s@vit.ac.in](mailto:harshavarthini.s@vit.ac.in), Mobile: +91 8110818304  
**Dr. N. Padmaja** - Assistant Professor, VIT Chennai  
Email: [padmaja.n@vit.ac.in](mailto:padmaja.n@vit.ac.in), Mobile: +91 9894848293

## ORGANIZING MEMBERS

**Faculties** - Department of Mathematics (SAS), VIT Chennai

## ADVISORY COMMITTEE

**Dr. G. Vinitha** - Professor and Dean-SAS, VIT Chennai  
**Dr. A. Manivannan** - Associate Professor and Head of Mathematics-(SAS), VIT Chennai

## KEYNOTE SPEAKERS

**Dr. Amit Kumar Chauhan** - Senior Research Associate, QNu Labs Pvt. Ltd., Bengaluru  
**Dr. Aswath Babu H** - IBM Qiskit Advocate, Assistant Professor, IIIT Dharwad  
**Prof. P. Balasubramaniam** - Senior Professor of Mathematics, Dean School of Sciences, The Gandhigram Rural Institute-Deemed to be University, Tamil Nadu  
**Ms. Janani A** - Quantum Engineer, IBM Research, Bengaluru  
**Dr. T. Kalaiselvi** - Associate professor & Head, Department of Computer Science and Applications, The Gandhigram Rural Institute - Deemed University, Tamil Nadu  
**Mr. Karthiganesh Durai** - Founder & CEO, KwantumG Research Labs Pvt. Ltd., Bengaluru  
**Dr. Keerthana Jaganathan** - Lecturer, School of Computer Science, Northumbria University, Newcastle, UK  
**Dr. Kunwar Singh** - Associate Professor, Department of CSE, NIT Trichy, Tamil Nadu  
**Dr. Mostafizur Rahaman** - Quantum Research Scientist. IBM Quantum Research Lab, Bengaluru  
**Dr. Pranab Dutta** - CEO & Co-founder, GDQ Labs, Bengaluru  
**Prof. Raveendran Paramesran** - Honorary Professor, Department of Electrical Engineering, Universiti Malaya, Kuala Lumpur, Malaysia  
**Mr. Sagar Dollin** - Team Lead, Quantum Software QpiAI India Pvt. Ltd., Bengaluru  
**Dr. D. Saraswathi** - Associate Professor, School of Computer Science Engineering, VIT Chennai, Tamil Nadu

## REGISTRATION FEES

Category	Fees details	
	Early-Bird Registration	Late Registration
UG/PG Students	Rs. 750	Rs. 1000
Research Scholar	Rs. 1000	Rs. 1500
Faculty/Industrial Delegates	Rs. 1500	Rs. 2000
International Delegates	\$ 50	\$ 65
*NOTE: Online mode is only applicable for international delegates.		

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