



**VIT**  
CHENNAI



**ANRF SPONSORED**

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

*This workshop bridges quantum mathematics and imaging with smart manufacturing and Industry 4.0, fostering interdisciplinary innovation and practical applications.*



**Monday - Friday**  
15-19, December 2025



**Time**  
09.00 AM - 04.00 PM



**Vellore Institute of Technology**  
Chennai

Visit us at: <https://qmi2025.onrender.com>

### **ORGANIZED BY**

Department of Mathematics  
School of Advanced Sciences  
VIT - Chennai, 600 127





## ABOUT VIT

Founded in 1984, as Vellore Engineering College, a self-financing institution dedicated to providing quality higher education. In 2001, the Union Ministry of Human Resource Development conferred university status on the institution under Section 3 of the University Grants Commission (UGC) Act, 1956. VIT is led by its visionary Founder and Chancellor, Dr. G. Viswanathan, a former Parliamentarian and Minister in the Government of Tamil Nadu. In recognition of his exceptional contributions to education, Dr. G. Viswanathan was awarded an honorary doctorate by West Virginia University (USA) in 2009 and the State University of New York (USA) in 2024. With a commitment to delivering world-class education on par with international standards, VIT continually adopts innovative approaches to teaching and research. Our Memoranda of Understanding with various international universities, being a major strength, enable meaningful collaborations via student and faculty exchanges and foster joint research projects. Many of our students, working in international organizations and universities, deliver high-quality solutions and conduct research that bring esteem to India and make us proud of our legacy. At VIT, the pursuit of excellence in education and research is complemented by a dynamic ecosystem of innovation, research and global engagement. As we advance steadily, we remain steadfast in our mission to nurture leaders and innovators who can make a meaningful impact on the world.

## 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

QMI-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

# 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  
Dept 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

# Committee Members

## CHIEF PATRON

**Dr. G. Viswanathan**  
*Founder & Chancellor*

## PATRONS

**Mr. Sankar Viswanathan**  
*Vice President*  
**Dr. Sekar Viswanathan**  
*Vice President*  
**Dr. G.V. Selvam**  
*Vice President*

## Co-PATRONS

**Dr. V. S. Kanchana Bhaaskaran**  
*Vice Chancellor*  
**Dr. T. Thyagarajan**  
*Pro-Vice Chancellor*  
**Dr. K. Sathiyarayanan**  
*Director*  
**Dr. P.K. Manoharan**  
*Additional Registrar*

## ADVISORY COMMITTEE

**Dr. G. Vinitha**  
*Professor and Dean-SAS*  
**Dr. A. Manivannan**  
*Associate Professor and Head*  
*Department of Mathematics-SAS*

## ORGANIZING MEMBERS

**Faculties**  
*Department of Mathematics (SAS)*

## CONVENOR

**Dr. N. Ramesh Babu**  
*Assistant Professor (Grade-1)*

## CO-CONVENORS

**Dr. S. Harshavarthini**  
*Assistant Professor (Grade-2)*  
**Dr. N. Padmaja**  
*Assistant Professor (Grade-1)*

## ADDRESS FOR CORRESPONDENCE

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# REGISTRATION

## ELIGIBILITY CRITERIA

The workshop is open to postgraduate students, Ph.D. scholars, and international participants, as well as faculty members and industry professionals from central/state/private academic institutions/colleges/universities with an interest in quantum computing. Only a limited number of participants will be selected. Preference will be given to postgraduate and Ph.D. scholars in Mathematics.

Event	Date
Opening Date for Registration	01/11/2025
Last Date for Registration	15/11/2025
Announcement of Participants List	17/11/2025
Last Date for Early Payment	19/11/2025
Last Date for Late Payment	22/11/2025

Category	Fees details	
	Early Payment	Late Payment
UG/PG Students	Rs. 750	Rs. 1000
Research Scholar	Rs. 1000	Rs. 1500
Faculty/Industrial Delegates	Rs. 1500	Rs. 2000
International Delegates	\$ 50	\$ 65

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**



## ACCOMMODATION

Accommodation will be arranged for participants on prior request either at the university guest house or at the nearby hotels reachable from the venue.

**REGISTER HERE**

**WEBSITE**

**HOW TO REACH**

