

QUICK 2026 Editorial: Conference on Quantum Computing, Artificial Intelligence, and Intelligent Knowledge Systems

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Abstract. This editorial introduces the [International Conference on Quantum Innovations for Computing and Knowledge Systems \(QUICK 2026\)](#). The conference provides an international forum for presenting advances in quantum computing, quantum algorithms, artificial intelligence, quantum materials, and secure communication technologies. QUICK 2026 emphasizes the convergence of quantum technologies with intelligent computing systems and real-world applications across scientific and industrial domains. All submissions were evaluated through a rigorous multi-stage review process, including desk screening and double-blind peer review, ensuring high scientific quality and research integrity. The proceedings highlight emerging breakthroughs and interdisciplinary innovations shaping the next generation of quantum-enabled computing and knowledge systems.

Introduction

Quantum technologies are transforming the foundations of modern computing, communication, and intelligent systems. Quantum mechanical phenomena such as superposition, entanglement, and interference enable computational paradigms beyond classical limits. Quantum computing therefore offers the potential to solve problems that remain intractable for conventional computing systems.

Recent advances in quantum algorithms, quantum materials, and quantum sensing are accelerating progress across multiple scientific and technological domains. These developments enable new capabilities in scientific discovery, secure communication, optimization, and large-scale data analysis.

The International Conference on Quantum Innovations for Computing and Knowledge Systems (QUICK 2026) provides an interdisciplinary platform for researchers, practitioners, and industry experts to present recent advances and discuss emerging challenges in quantum science and engineering. The conference focuses on quantum computing architectures, quantum algorithms, quantum artificial intelligence, quantum materials, and secure quantum communication systems.

By bringing together contributions from academia, industry, and global research laboratories, QUICK 2026 aims to stimulate collaboration, accelerate innovation, and promote

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scalable quantum technologies that will shape the next generation of intelligent computing systems.

Preface

Quantum technologies are rapidly reshaping the future of computation, communication, and intelligent systems. Advances in quantum mechanics, quantum information theory, and nanoscale engineering are enabling powerful computational frameworks with unprecedented capabilities. These technologies promise significant breakthroughs in processing power, secure communications, and high-precision sensing.

As global research investment in quantum technologies increases, interdisciplinary collaboration becomes essential. Platforms that integrate expertise from computing, physics, artificial intelligence, and engineering are therefore critical for accelerating innovation.

The International Conference on Quantum Innovations for Computing and Knowledge Systems (QUICK 2026) addresses this need by providing a global forum for the dissemination of cutting-edge research in quantum science and advanced computing systems. The conference brings together researchers, engineers, practitioners, and policymakers to explore emerging developments in quantum computing, artificial intelligence, quantum materials, sensing technologies, and secure communications.

A central theme of the conference is the convergence of quantum technologies with modern computational paradigms. In particular, QUICK 2026 highlights the emerging field of *Quantum Artificial Intelligence (QAI)*. QAI explores how quantum computational primitives can enhance learning algorithms, data processing, and knowledge-driven decision systems.

The technical program is organized into four primary tracks. The first track focuses on *Quantum Computing Architectures and Technologies*, including scalable processors, superconducting and photonic qubit platforms, cryogenic control systems, and hybrid quantum–classical infrastructures. The second track addresses *Quantum Algorithms and Computing Paradigms*, including algorithm design, quantum machine learning, hybrid optimization techniques such as VQE and QAOA, and benchmarking of quantum systems.

The third track explores *Quantum Artificial Intelligence and Knowledge Systems*, covering quantum-enhanced learning models, knowledge representation, quantum natural language processing, and application domains such as healthcare, finance, and cybersecurity. The fourth track focuses on *Quantum Materials, Devices, and Emerging Technologies*, including spintronics, topological materials, quantum photonics, nanoscale devices, and quantum sensing technologies.

To ensure the highest scientific standards, QUICK 2026 implemented a rigorous multi-stage peer-review methodology. The conference received 93 paper submissions from researchers across academia, industry, and international research laboratories.

Figure 1 presents the conceptual structure of the QUICK 2026 conference. The upper section illustrates the core interdisciplinary research domains addressed by the conference, including quantum computing architectures, quantum artificial intelligence and knowledge systems, and quantum materials and device technologies. These research pillars collectively enable the development of next-generation quantum computing infrastructures and intelligent knowledge-driven systems.

The lower section of Figure 1 represents the methodological framework adopted to ensure scientific quality and research integrity of the conference proceedings. Submitted manuscripts first undergo an initial desk screening to evaluate scope alignment, originality, and compliance with ethical publication standards. Manuscripts passing this stage proceed to a double-blind peer-review process involving independent expert reviewers. Based on reviewer evaluations and program committee deliberations, high-quality contributions are



Figure 1. Conceptual overview of the QUICK 2026 conference framework.

selected for presentation and publication. This structured evaluation methodology ensures transparency, fairness, and scientific rigor in the conference publication process. Each submission first underwent a comprehensive desk screening conducted by the internal review committee. This stage evaluated scope alignment, originality, technical validity, and ethical compliance. Plagiarism detection and AI-content verification were also applied to ensure research integrity.

Following this stage, 78 submissions were rejected due to scope mismatch or insufficient technical contribution. The remaining manuscripts proceeded to a double-blind peer-review process. In this stage, authors and reviewers remained anonymous to ensure fairness and objectivity.

Each paper was evaluated by multiple independent reviewers from the technical program committee and external experts. Evaluation criteria included originality, methodological rigor, technical soundness, clarity of presentation, and potential research impact.

Based on reviewer reports and program committee deliberations, 15 high-quality papers were selected for presentation and publication in the conference proceedings.

QUICK 2026 also features keynote lectures and invited presentations from internationally recognized experts in quantum computing, artificial intelligence, and emerging computational technologies. These talks highlight current scientific challenges, industrial perspectives, and future research directions shaping the global quantum technology ecosystem.

The conference is hosted by **Vellore Institute of Technology (VIT), Chennai**, one of India's leading research institutions in engineering and advanced technologies. QUICK 2026 is organized in collaboration with **Deakin University, Australia**, a globally recognized research-intensive university with strong contributions in digital technologies, distributed systems, and quantum computing research. We sincerely thank the authors for their valuable

research contributions. We also acknowledge the reviewers and technical program committee members for their rigorous evaluations. Their efforts ensured the scientific quality and integrity of the conference.

We hope that the QUICK 2026 proceedings serve as a valuable reference for researchers, practitioners, and students working in quantum computing, artificial intelligence, and advanced computing systems. The ideas presented in this conference are expected to contribute to the advancement of next-generation quantum technologies and intelligent knowledge systems.

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