Confederation of Indian Industry

Quantum Technology Conclave

Decoding Quantum: Insights for tomorrow's World

FRIDAY, 28 MARCH 2025 : ITC MAURYA, NEW DELHI

Programme

1000 - 1050 hrs Inaugural Session | "Decoding Quantum: Insights for Tomorrow's World"	
Quantum technology is set to revolutionize the way we compute, communicate, and secure information. With its potential to solve complex problems beyond the capabilities of classical systems, quantum computing is unlocking new frontiers in materials science, cryptography, artificial intelligence, and more. As industries and governments invest in quantum advancements, understanding its real-world applications becomes crucial. This programme will explore emerging breakthroughs, industry adoption, and how quantum will shape the future of innovation and technology.	
1100 hrs	Inaugural Session Concludes

1100 – 1200 hrs Panel Discussion - I | "Bridging Quantum and AI: Unlocking New Possibilities"	
Background: The convergence of quantum computing and artificial intelligence is set to redefine problem-solving across industries. Quantum-powered AI can accelerate data processing, optimize decision-making, and revolutionize fields like drug discovery, finance, and cybersecurity. This session explores how integrating quantum algorithms with AI can unlock unprecedented capabilities, driving the next wave of technological breakthroughs. **Discussion points:** • How can quantum computing accelerate AI model training and optimization? • Can AI-driven algorithms help mitigate quantum computing errors and improve stability? • How will the convergence of AI and quantum technology transform healthcare, finance, and manufacturing? • What are the key barriers in merging AI and quantum computing for practical applications? · What research and policy initiatives are needed to drive innovation at the intersection of AI and quantum technology?	
1200 hrs	Session concludes
1200 – 1215 hrs	Tea / Coffee Break

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1215 – 1315 hrs
Panel Discussion - II | "Quantum-Driven Process Optimization for Smart Factories"

Background:

Quantum technology is redefining manufacturing by enabling real-time data processing, predictive maintenance, and optimization of complex workflows. Smart factories powered by quantum computing can enhance efficiency, reduce downtime, and drive sustainable production. This session explores how quantum algorithms and AI-driven insights are transforming industrial operations, making manufacturing smarter, faster, and more resilient.

Discussion Points:

- How quantum algorithms can optimize production schedules, reduce downtime, and improve supply chain
- management.
- Leveraging quantum computing to analyze massive industrial data sets for predictive maintenance and quality control.
- Utilizing quantum simulations to minimize energy consumption and enhance sustainability in smart factories.
- Exploring how quantum technology accelerates the development of new materials for high-performance manufacturing.
- Integration with Industry 4.0 – Understanding the role of quantum computing in advancing automation, robotics, and AI-driven smart factories.

1315 hrs	Session concludes

1315 – 1415 hrs
Panel Discussion – III | "Quantum Cryptography: Strengthening Data Security in Banking"

Background:

As cyber threats grow, traditional encryption methods face increasing vulnerabilities. Quantum cryptography offers an unbreakable security framework, leveraging quantum mechanics to protect sensitive financial transactions and customer data. This session explores how banks can integrate quantum-safe encryption, ensuring future-proof cybersecurity, safeguarding digital assets, and maintaining trust in an era of evolving cyber risks.

Discussion Points:

- How quantum key distribution (QKD) ensures unbreakable encryption for banking transactions.
- Assessing risks posed by quantum computing to current cryptographic systems.
- Implementation Challenges – Exploring infrastructure, cost, and regulatory hurdles in adopting quantum cryptography in banking.
- Global Developments & Use Cases – Examining real-world applications of quantum-safe encryption in financial institutions.
- Future Roadmap for Secure Banking – Strategies for banks to transition towards quantum-resistant security frameworks.

1415 hrs	Session concludes
1415 onwards	Networking Lunch & Conclave Concludes

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