

## International Workshop on “Engineering and Integration Challenges in Quantum Communication and Quantum Computing”

**21<sup>st</sup> & 22<sup>nd</sup> March 2024**  
**Workshop Schedule**

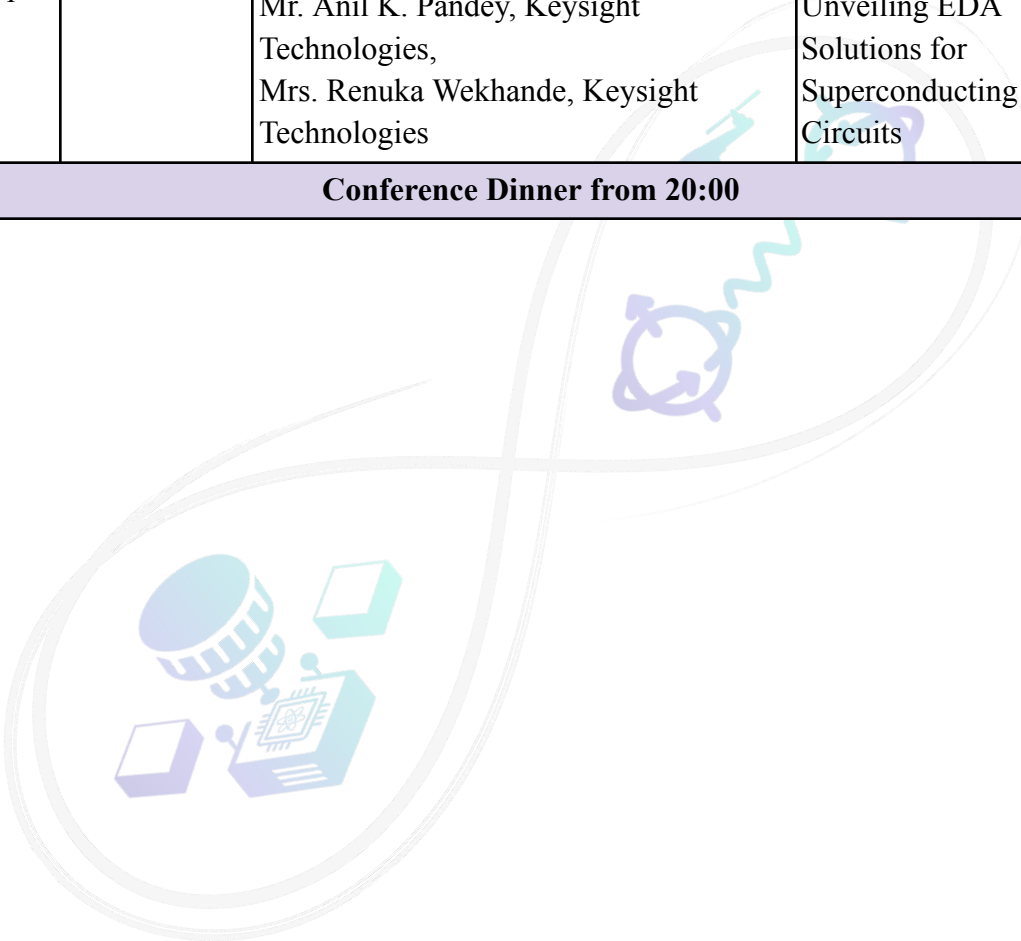
DAY 1 – 21st March 2024		Title of the talk	
<b>Registration (8:30-9:00)</b>			
09:00 – 09:30	<b>Inaugural Session</b>	1. Welcome address by <b>Col. A.K. Nath (Retd.)</b> , Executive Director, Corporate Strategy and C-DAC, Pune 2. Address by <b>Smt. Sunita Verma</b> , Group Coordinator, R&D in IT, MeitY 3. Address by <b>Dr. S. D. Sudarsan</b> , Executive Director, C-DAC Bangalore 4. Inaugural Address by <b>Shri. Magesh Ethirajan</b> , Director General, C-DAC	
09:30- 10:15	<b>Keynote Talk</b>	Dr. Rajeev Malik, Program Director, Systems Development & Deployment, IBM Quantum	Quantum Computing in the Utility Era
10:15-10:45	<b>Expert Talk</b>	Prof. Apoorva Patel, Indian Institute of Science (IISc), Bangalore	Quantum Technology: Directions and Prospects
<b>10:45 – 11:00: Tea break</b>			
11:00-11:30 IST 8:30-9:00 MSK	<b>Expert Talk</b>	Dr. Aleksey Fedorov, Russian Quantum Center	Recent progress in quantum cryptanalysis and developing quantum-resistant cryptography
11:30-12:00	<b>Expert Talk</b>	Prof. Amlan Chakrabarti, University of Calcutta	Quantum Algorithms for Optimization and Machine Learning
12:00-12:30	<b>Industry Talk</b>	Mr. Mark Elo & Dr. Jin Xiaoyue, Tabor Electronics Ltd.	Commercially Available, Modular Superconducting Quantum Computers



12:30-13:00	<b>Panel Session</b>	(Host) Smt. Reena Dayal, Quantum Ecosystems Technology Council of India (QETCI)	Brainstorming on Standardization in Quantum Technologies
		Shri. Manoj Jain, Ministry of Electronics & Information Technology	
		Mr. A. K. Mittal, Telecommunications Standards Development Society, India (TSDSI)	
		Shri. Vinod Kumar, Deputy Director General (Quantum Technology), Department of Telecom, Govt. of India	
13:00-13:30	<b>Industry Session: Quantum Computing</b>	Dr. Manjunath R. Venkatesh, QpiAI India Pvt Ltd	Quantum Computers for DataCentres: Challenges and Future Roadmap
		Dr. Mrityunjay Ghosh, HCL Software	Auto correcting Quantum Random Number Generator - Towards building a highly secured path to Quantum-Safe Communication
		Dr. Uday Wad, Qkrishi	Quantum Portfolio Optimisation
<b>13:30 – 14:30: Lunch</b>			
14:30-15:00	<b>Industry Talk</b>	Mr. Dor Israeli, Quantum Machines	Quantum-Classical Supercomputing - Accelerating the Path to Quantum Advantage
15:00-15:30	<b>Industry Talk</b>	Mr. Vishal Chatrath, QuantrolOx, Finland	Accelerating Qubit Development Through Automation
15:30 – 16:00 IST 11:00-11:30 CET	<b>Industry Talk</b>	Mr. Matthijs Rijlaarsdam, QuantWare, Netherland	Accelerating sovereign quantum capabilities with off the shelf quantum processors
16:00-16:45 IST	<b>Keynote Talk</b>	Prof. Andrew Briggs, Professor of Nanomaterials, Department of Materials,	Needs-Driven Progress in Quantum Computing



10:30-11:15 GMT		Oxford University and Chair QuantrolOx	
<b>16:45 – 17:00 Tea Break</b>			
17:00 pm-20:00 pm	<b>Hands-On Session I</b>	Quantum Circuit Design, Dr. Mohamed Hassan, Keysight Technologies, Mr. Nitin Nigam, Keysight Technologies, Mr. Anil K. Pandey, Keysight Technologies, Mrs. Renuka Wekhande, Keysight Technologies	Journey into Quantum: Unveiling EDA Solutions for Superconducting Quantum Circuits
<b>Conference Dinner from 20:00</b>			





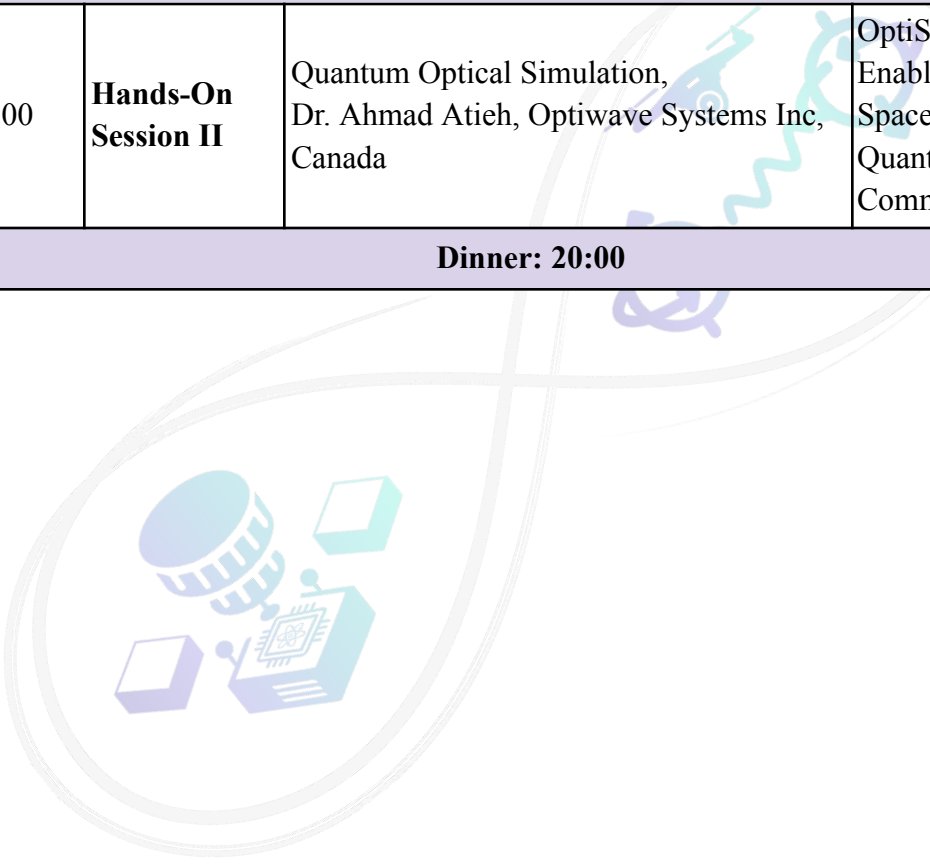
DAY 2 – 22nd March 2024			Title of the talk
<b>08:30 – 09:00: Tea and Snacks</b>			
9:00 - 10:00 IST 21:30-22:30 MDT	<b>Panel Session</b>	(Host) Dr. Anindita Banerjee, Centre for Development of Advanced Computing (C-DAC), Pune	Creation of test and evaluation facility for quantum technology devices
		Prof. C. S. Unnikrishnan, School of Quantum Technologies, Defence Institute of Advanced Technology, Pune	
		Prof. Subhadeep De, Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune	
		Prof. Barry Sanders, University of Calgary	
		Dr. Abhijit Mitra, Indraprastha Institute of Information Technology, Delhi (IIIT Delhi)	
		Prof. Archan S. Majumdar, S. N. Bose National Centre for Basic Sciences, Kolkata	
10:00 - 10:30	<b>Expert Talk</b>	Mr. Arka Mukherjee, Centre for Development of Telematics (C-DOT)	Fiber-based Quantum Key Distribution: Overview and Deployment Challenges
10:30 - 11:00	<b>Expert Talk</b>	Prof. Anirban Pathak, Jaypee Institute of Information Technology (JIIT), Noida	Will all the eavesdroppers be unemployed in the quantum era of secure communication?
11:00 - 11:30	<b>Expert Talk</b>	Dr. Sushil Mujumdar, Tata Institute of Fundamental Research (TIFR), Mumbai	HAP based Quantum Communication
<b>11:30– 11:45: Tea Break</b>			
11:45 - 12:15	<b>Panel Session</b>	Dr. Prem Laxman Das, Society for Electronic transaction and security	Brainstorming the Challenges in PQC



		(SETS), Chennai	Implementation
		Dr. Dhiman Saha, Indian Institute of Technology (IIT), Bhilai	
		Mr. Parag Kulkarni, Muspark Technologies Private Limited	
		(Host) Mrs. Chaitanya Palli, C.R.Rao Advanced Institute of Mathematics, Statistics and Computer Science (AIMSCS)	
12:15-12:45	<b>Expert Talk</b>	Mr. Adarsh Jain, Space Applications Centre (SAC), Indian Space Research Organisation (ISRO)	Engineering challenges of QKD in Space
12:45-13:00	<b>Expert Talk</b>	Dr. Anindita Banerjee, Centre for Development of Advanced Computing (C-DAC), Pune	Aerial Quantum Communication
13:00 - 13:45 IST 8:30 - 9:15 CET	<b>Keynote Talk</b>	Dr. Eleni Diamanti, CNRS Research Director at Sorbonne Université	Secure communications in quantum networks
<b>13:45 – 14:45: Lunch</b>			
14:45 - 15:30 IST 10:15 - 11:00 CET	<b>Keynote Talk</b>	Prof. Ulrik Lund Andersen, Denmark Technical University	Continuous Variable Quantum Information Processing: Quantum computing and Quantum Key Distribution
15:30 - 16:15 IST 11:00- 11:45 CET	<b>Keynote Talk</b>	Prof. Vadim Makarov, University of Vigo, Vigo	Certification of a Quantum Key Distribution System against Implementation Loopholes
16:15 - 17:15	<b>Panel Session</b>	Dr. Jedidiah Pradhan, Variable Energy Cyclotron Centre (VECC), Kolkata Dr. Nishith Kumar Das, Variable Energy Cyclotron Centre (VECC), Kolkata Dr. Anup Kumar Choudhury, Inter-University Accelerator Centre	Brainstorming on Cryogenics for quantum computers



		(IUAC), Delhi	
		Prof. Milind Atrey, Indian Institute of Technology (IIT), Bombay	
		Prof. Bhupendra N. Dev, The Chatterjee Group (TCG) Crest, Kolkata	
17:15 - 17:45	<b>Industry Talk</b>	Dr. Niels Bultink, Cofounder & CEO, Qblox	Enabling quantum advantage in HPC environments through scalable control
<b>Tea Break: 17:45-18:00</b>			
18:00-20:00	<b>Hands-On Session II</b>	Quantum Optical Simulation, Dr. Ahmad Atieh, Optiwave Systems Inc, Canada	OptiSystem Software Enabling QKD and Free Space Quantum Communication
<b>Dinner: 20:00</b>			





<b>Industry Networking and National Quantum Mission brainstorming on Hybrid Quantum-Classical Approaches</b>			
<b>23rd March 2024</b>			
<b>08:45 – 09:15: Tea and Snacks</b>			
9:15 - 10:40	<b>Industry Session I in conjunction with workshop</b>	Mr. Animesh Aaryan, TAQBit	
		Dr. Gautam Shaw, SynergyQ	Practical issues in QKD networks
		Dr. Sourav Chatterjee, TCS Research, Tata Consultancy Services Ltd	Quantum-enhanced sensing & metrology explorations at TCS
		Dr. Vijay Rao, LTIMindTree	
10:40 - 10:50	<b>Expert Talk</b>	Ms. Shradhanjali Sahu, PhD candidate at University of Leeds	Continuous Variable Quantum Key Distribution in Multiple-Input Multiple-Output Settings
<b>Tea break: 10:50 - 11:00</b>			
11:00 - 12:00	<b>National Quantum Mission Brainstorming on Hybrid Quantum-Classical Approaches</b>		
12:00 - 13:30	<b>Industry Session II in conjunction with workshop</b>	Dr. Manish Modani, Nvidia	Accelerated Hybrid Quantum Computing
		<b>Audience feedback</b>	
<b>Lunch: 13:30 - 14:30</b>			
14:30 - 15:30	<b>C-DAC, Pune: HPC Lab Visit</b>		
15:30 - 16:00	<b>C-DAC, Pune: Quantum Technology Lab Visit</b>		