Book of Abstracts

Quantum Pitch Fest

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22 - 23 May 2026
IISc,Bengaluru

Our Eco system Partners

Title

Building a Sustainable Quantum Ecosystem
(Plenary Talk)

Speaker

Prof. Arindam Ghosh

Professor, Department of Physics, IISc

Biography:

Professor Arindam Ghosh is an Associate Professor at the Department of Physics, Indian Institute of Science. He did his PhD at the Indian Institute of Science on probing metal-insulator transition and Coulomb interaction effect in doped semiconductors in 2000, following which he worked in Cambridge University, UK, as a post doctoral researcher. His current research interests include the transport properties of two-dimensional electronic systems in semiconductors, carbon-based low-dimensional systems, optoelectronic properties of atomically-thin semiconductor membranes, magnetic nanostructures, and structural stability of nanoscale systems such as metallic nanowires and nanoparticles. The technical expertise of his research group lies in detection and measurement of ultra-low level electrical signals, and wideband “noise” measurements down to milliKelvin temperatures. Professor Ghosh has published more than hundred papers in International journals and conferences, including the Physical Review Letters, and Nature Physics. He is a member of the American Physical Society, Indian Physics Association, Programme Review Committee of the International Center for Theoretical Sciences, and Advisory Committee of IOP Publishing Asia Pacific. He is also a reviewer for various journals including those from the American Chemical Society, American Physical Society, and the American Institute of Physics. He has received numerous awards including Indian Institute of Science Alumni Association scholarship (1992), The UK-India Education and Research Initiative award (2006), IBM-IUSSTF visiting fellowship in Nanotechnology (2008), SwarnaJayanti Fellowship, Government of India (2008), the Material Research Society of India Medal (2012) and the Shanti Swarup Bhatnagar Prize in 2012.

Title

InQubate - IISc's comprehensive Quantum startup acceleration platform

Speaker

Prof. Akshay Naik

PI, Wadhwani Innovation Centre, QuRP, & CeNSE, IISc

Biography:

Akshay Naik is a Professor at the Centre for Nano Science and Engineering (CeNSE), Indian Institute of Science. His research focuses on nanoelectromechanical systems (NEMS), nonlinear dynamics, MEMS/NEMS sensors, optomechanical systems, and quantum technologies. He works on engineering nanoscale mechanical systems for sensing, signal processing, and quantum applications.

He completed his Ph.D. in Electrical Engineering from the University of Maryland, College Park, USA, in 2006, after earning an M.Sc. in Physics from IIT Bombay and a B.Sc. in Physics from Mumbai University. Before joining IISc, he worked as a Postdoctoral Fellow and Research Engineer at the California Institute of Technology (Caltech), USA.

Prof. Naik also serves as Co-Convenor of the IISc Quantum Technology Initiative and is associated with the Quantum Research Park (QuRP), supporting interdisciplinary research and innovation in quantum technologies.

Title

Enabling the ecosystem to achieve Quantum Utility

Speaker

Dr. Dhinakaran Vinayagamurthy

IBM Quantum team

Abstract :

We have had demonstrations across domains on IBM Quantum computers by our partners at a scale that cannot be simulated on classical hardware. We will provide an overview of the Qiskit open-source ecosystem and the tools that enabled those demonstrations.

Biography:

Dr. Dhinakaran Vinayagamurthy is the in-country manager for the IBM Quantum team in India and an Adjunct Professor in the Department of DSAI at IIT Madras. The technical focus is on enabling researchers and developers to build advanced algorithmic demonstrations on IBM quantum hardware and useful tools around Qiskit, the quantum stack used by 70% of quantum programmers in the world. His research in quantum computing and cryptography has resulted in about 20 peer-reviewed publications and 16 patents with about 1500 citations now. He has received a best paper finalist award at ACM CCS, IBM internal awards like Outstanding Technical Accomplishments, Technical Collaboration Achievement and One IBM India-South Asia Growth Award respectively for his research, significant contributions to open-source and IBM India market growth respectively. Dhinakaran holds a PhD in Computer Science (Quantum Information) from the University of Waterloo, a Masters in Computer Science from the University of Toronto and a Bachelors in Computer Science & Engineering from the College of Engineering, Guindy.

LinkedIn :

https://www.linkedin.com/in/dhinakaran-vinayagamurthy/

Title

Cooling the Quantum Revolution: Building India's Cryogenic Ecosystem for Quantum Technologies

Speaker

Dr. Deep Talukdar

Founder of Cryonano, Labs Pvt. Ltd

Abstract :

The development of quantum technologies fundamentally depends on advanced cryogenic and characterization infrastructure capable of probing matter at extremely low temperatures and ultra-low-noise conditions. This talk will discuss the role of cryogenic ecosystems in enabling quantum transport measurements, semiconductor device research, and characterization of emerging 2D materials and nanoscale systems. It will explore how foundational infrastructure such as cryogenic measurement platforms, vacuum systems, low-noise electronics, and precision instrumentation forms the basis for future advances in quantum computing, sensing, and communication technologies. The session will also examine current technological gaps in India, opportunities for indigenous product development, startup participation, and the importance of academia-industry collaboration in building scalable deep-tech and quantum engineering ecosystems.

Biography:

Dr. Deep Talukdar is the founder of Cryonano, Labs Pvt. Ltd. a deep-technology company focused on advanced cryogenic systems, semiconductor engineering, precision surface technologies, critical power electronic systems and enabling infrastructure for emerging quantum applications. His work spans cryogenic engineering, low-noise electronic systems, thermal management, vacuum technologies, advanced manufacturing, and indigenous hardware development for high-performance scientific and industrial systems.
He earned his PhD from the Saha Institute of Nuclear Physics, Kolkata in 2012 and postdoctoral research at the University of Jyväskylä, Finland, and Nanyang Technological University, Singapore. He has contributed to research in nanoscale semiconductor devices, quantum transport phenomena, and low-noise measurements, including work related to carbon nanotube transistors, 2D materials and advanced electronic characterization. His broader interests lie at the intersection of quantum technologies, semiconductor systems, power electronics, and scalable deep-tech engineering ecosystems.

Company Website: www.cryonano.com

Title

Building a globally relevant semiconductor product company from India

Speaker

Prof. Chetan Singh Thakur

Faculty member at the Indian Institute of Science (IISc)

Abstract :

Quantum computing has captured global attention, but large-scale fault-tolerant quantum computers remain a long-term challenge due to limitations in qubit scalability, control complexity, packaging, cryogenics, and error correction. This talk highlights the emerging quantum ecosystem and the significant commercialization opportunities it creates for engineers. The talk will also discuss quantum-inspired annealers as a near-term commercialization pathway for solving hard optimization problems in logistics, finance, telecom, and data centers while full quantum hardware matures. The session aims to present a practical roadmap for building scalable quantum businesses beyond qubits.

Biography:

Prof. Chetan Singh Thakur is a faculty member at the Indian Institute of Science (IISc), Bangalore, where he leads research at the intersection of unconventional computing paradigms, including quantum computing, neuromorphic computing, and mixed-signal intelligent hardware systems. He received his Ph.D. in Neuromorphic Engineering from Western Sydney University, Australia, and his M.Tech from Indian Institute of Technology Bombay. Before joining Indian Institute of Science, he worked as a Research Fellow at Johns Hopkins University and as a Senior Integrated Circuit Design Engineer at Texas Instruments, Singapore. His research focuses on neuromorphic computing, quantum control electronics, computational neuroscience, VLSI Chip design, and machine learning, with an emphasis on building next-generation energy-efficient intelligent systems. He is a recipient of several prestigious recognitions, including the Pratiksha Trust Young Investigator Award, SERB Early Career Research Award, DST Inspire Faculty Award, and the Indian National Academy of Engineering Abdul Kalam Innovation Award.

Website: https://labs.dese.iisc.ac.in/neuronics/

Title

Building a globally relevant semiconductor product company from India

Speaker

Dr. Hareesh Chandrasekar

CEO & Co-founder of AGNIT Semiconductors Private Limited

Abstract :

This talk will present Agnit's journey starting from its commencement in 2021 to its existence proof and present status as a vertically integrated Gallium Nitride semiconductor product company, the opportunities in the compound semiconductor space and why they matter now and highly subjective, n=1 sample size assessment of the challenges involved in building a globally relevant semiconductor product company from India.

Biography:

Dr. Hareesh Chandrasekar is the CEO & Co-founder of AGNIT Semiconductors Private Limited. AGNIT is a spin-off from the Indian Institute of Science, Bangalore and is India's first Gallium Nitride technology startup working on manufacturing Gallium Nitride semiconductor components. Hareesh received his PhD from the Centre for Nano Science and Engineering, Indian Institute of Science in 2016, for his work on Gallium Nitride materials & devices, where his doctoral thesis was awarded the Best Thesis Prize for Applied Research. This was followed by postdoctoral stints at the University of Bristol, UK and The Ohio State University, USA, all the while working on various aspects of Gallium Nitride technology. He has also worked for IBM India briefly as a chip designer in what feels like a past life. Hareesh is a Senior Member of the Institute of Electrical and Electronics Engineers (SM-IEEE), and a (very) junior member of the growing ESDM entrepreneurial community in India given AGNIT's short 5-year old existence thus far

Relevant links:

https://in.linkedin.com/in/hareeshchandrasekar ; https://www.agnitsemi.com

Title

Building India's Quantum Computing Future: Technology, Talent, and Startups

Speaker

Vijay Ramanujan

CEO of the Foundation for Quantum Computing Innovation (FQCI) T-Hub

Abstract :

This presentation provides an introduction to National Quantum Mission (NQM) & highlights the vision, progress, and strategic roadmap of the Foundation for QC Innovation (FQCI), the DST–National Quantum Mission Quantum Computing Hub at IISc Bengaluru. The presentation showcases India's multi-platform quantum computing initiatives of FQCI spanning photonic, superconducting, semiconducting, trapped-ion, and neutral-atom technologies, along with indigenous hardware, fabrication, and cloud-accessible quantum systems.It outlines ongoing efforts in ecosystem development through startup enablement, startup acceleration, industry collaborations, centralized fabrication facilities, and academia-industry partnerships. The talk also emphasizes human resource development initiatives including fellowships, internships, workshops, and skill-building programs aimed at creating a future-ready quantum workforce. Additionally, the presentation discusses startup incubation pathways, technology commercialization opportunities, and strategic collaborations with national and international stakeholders. Overall, it presents a comprehensive overview of India's emerging quantum innovation ecosystem and the role of FQCI in enabling sovereign quantum technologies and entrepreneurial growth.

Biography:

Vijay A. Ramanujan is the CEO of the Foundation for Quantum Computing Innovation (FQCI) T-Hub based at the IISC, Bengaluru, operating under India's National Quantum Mission (NQM) led by the Department of Science & Technology (DST). Responsible for building and enabling India's quantum computing ecosystem, with a focus on developing scalable, indigenous quantum technologies and fostering a world-class innovation ecosystem spanning research, applications, startups, and talent development in quantum science and engineering. To accelerate India's journey from laboratory innovation to deployed quantum technologies by bridging government, academia, startups, enterprises, and international collaborators.

Seasoned business leader with nearly three decades of experience in digital technologies and large-scale transformation across global markets - US, UK, India, and APAC. Has led high-impact transformation programs across multiple sectors such as Manufacturing, BFSI, Pharma, Utilities, and Govt. Work spans emerging and strategic technology domains - quantum computing, Industry 4.0, electronics and semiconductors, IoT, cloud computing, data analytics, and cybersecurity, while building and scaling global delivery and innovation ecosystems. A trusted advisor to enterprises and public sector leaders, Vijay combines deep engineering and IT services expertise with hands-on leadership in strategy, operations, and growth execution. His experience includes CXO and stakeholder engagement, go-to-market strategy, global market expansion, business model innovation, startup mentorship, and risk and compliance management.

Title

Building blocks for India's sovereign Quantum Ecosystem

Speaker

Aditya SG Vyas

The Chief Executive Officer of the QMD Foundation

Abstract :

QMD Foundation in building India's sovereign quantum hardware ecosystem under the National Quantum Mission. It includes Foundation's efforts in translating quantum research into deployable technologies through indigenous development of single-photon emitters, SPAD detectors, cryogenic low-noise amplifiers, quantum frequency combs, and advanced quantum materials platforms. Our efforts include creation of a collaborative ecosystem spanning academia, industry, startups, and international partners, alongside initiatives in talent development, infrastructure creation, and technology commercialization. Through support of National Quantum Mission, QMD Foundation serves as the foundational hardware layer enabling quantum computing, communication, and sensing applications in India. We shall also discuss the roadmap toward scalable fabrication, startup integration, and the development of globally competitive quantum technologies for strategic and societal applications.

Biography:

Aditya SG Vyas is a technology and innovation professional working at the intersection of academia, industry, and deep-tech ecosystems. He currently serves as the Chief Executive Officer of the QMD Foundation — the Quantum Materials and Devices Hub established at Indian Institute of Technology Delhi under India's National Quantum Mission. His work focuses on translating research into deployable technologies through industry partnerships, startup engagement, and innovation-led collaboration. Over the years, Aditya has worked across domains including IoT systems, embedded technologies, healthcare innovation, and technology commercialization, with a consistent focus on connecting research with real-world applications. He has previously led the IITI DRISHTI CPS Foundation at IIT Indore and also served as Regional Lead at IIMA Ventures. He holds a degree in Electronics Engineering and a master's in Consultancy Management.

Linkedin- https://www.linkedin.com/in/aditya-sg-vyas/
Company Website- http://qmdhub.co.in

Title

Building a Quantum Secure Nation

Speaker

Ravindra Barlingay

The Chief Executive Officer of the QMD Foundation

Abstract :

Quantum technologies are no longer merely scientific pursuits, they are becoming the trust infrastructure of future civilization. As the world enters an era shaped by Quantum Computing, Quantum Communication, AI, and sovereign digital systems, nations are competing not only for technological advantage, but for control over the next global architecture of security, intelligence, and trusted infrastructure.

This talk presents a bold perspective on India's once-in-a-generation opportunity to move from technology consumer to architect of the quantum era. From the lens of the IITM CDOT Samgnya Technologies Foundation, National Hub for Quantum Communication under the National Quantum Mission, the session will explore the rise of quantum-safe ecosystems, post-quantum cybersecurity, indigenous deep-tech innovation, startup opportunities, and strategic infrastructure leadership.

The talk will challenge founders, researchers, investors, and policymakers to think beyond products and participate in building the foundational trust layer of the 21st century.

Linkedin:https://www.linkedin.com/in/ravindrabarlingay/

Portal: www.samgnya.in

Title

An overview of quantum sensing and metrology: NQM perspectives

Speaker

Dr. Kasturi Saha

The Chief Executive Officer of the QMD Foundation

Abstract :

In this talk, I will present the national and global outlook of our Quantum Sensing and Metrology Hub, highlighting its role in advancing precision measurement technologies. I will outline core capabilities, including NV-diamond sensing, atomic magnetometry platforms, quantum imaging, and scalable instrumentation, along with the technical and translational support offered to users. I will discuss pathways for startups through prototyping, validation, and industry partnerships, and describe engagement avenues for students and academicians via internships, collaborative projects, and training programs. Finally, I will highlight low-hanging opportunities and key domains where indigenous solutions can reduce India's reliance on imports.

Biography:

Kasturi Saha is a Professor in the Department of Electrical Engineering at IIT Bombay. She received her PhD from Cornell University, working with Alexander Gaeta on nonlinear photonics and frequency combs, in collaboration with Michal Lipson. She completed her postdoctoral research at Massachusetts Institute of Technology with Paola Cappellaro, focusing on NV-diamond quantum sensing and spin-based gyroscopes. Since joining IIT Bombay in 2016, she has led pioneering efforts in quantum sensing, including advances in NV-based magnetometry, quantum imaging, and low-temperature metrology platforms. She currently serves as Project Director of the Qmet Tech Foundation under India's National Quantum Mission.

Her work has been recognized through several prestigious honors, including Associate Fellowship of the Indian National Science Academy, the DST INSPIRE Faculty Fellowship, IIT Bombay Young Faculty Fellowship, Venus International Young Researcher Award (2023), SERB POWER Research Grant (2023–2025), and the IIT Bombay C'1973 Research Excellence Award (2025).

Links : qmettech.com, https://www.ee.iitb.ac.in/~kasturis/index.php

Title

The Quantum Opportunity: Scaling Innovation for Business Impact

Speaker

Dr. Manjunath Ramachandra

Senior Principal Member at Wipro's CTO Office

Abstract :

Quantum technologies are evolving from exploratory research to enterprise-ready innovation, unlocking unprecedented business opportunities. This talk outlines the innovation-to-impact funnel across time horizons and explores how Quantum AI & ML, optimization, simulation and precision measurement can scale enterprise impact. It presents a unified framework built on key pillars of quantum technology integrated with classical systems for real-world value. An ecosystem-driven innovation network linking enterprises, academia, domain experts, and crowdsourced platforms bridges research and deployment. The talk concludes with a blueprint for scaling quantum impact through hybrid quantum-classical approaches and targeted, value-driven use cases.

Biography:

Dr. Manjunath Ramachandra, DMTS – Senior Principal Member at Wipro's CTO Office, has filed over 91 patents and authored 210 papers and two books. He has contributed to global standards through Wi-Fi Alliance, DLNA, and CE-Linux Forum. He chairs IEEE initiatives on Quantum Applications and Industrial AI Model Verification. At TSDSI, he led the Quantum Communication Forum and contributes to Underwater QKD and Trusted Node study groups. He also serves on India's Interministerial Advisory Group on Quantum Technologies and the MeitY-funded FinTeQ Project Steering Committee

LinkedIn : https://in.linkedin.com/company/wipro

Title

Accenture's role in advancing clients' quantum journeys

Speaker

Karishma Khanna

Managing Director — Ventures & Emerging Ecosystem at Accenture

Syamasundar Gopasana

Technology Innovation Senior Manager at Accenture,

Karishma Khanna

Syamasundar Gopasana

Abstract :

With close to a decade of hands-on quantum research and industry leadership, Accenture has built one of the most comprehensive quantum practices in the world. Through its Quantum Foundry, Accenture brings together deep thought leadership, pioneering industry–academic collaborations, including a multi-year partnership with the Indian Institute of Science, and strategic alliances with promising quantum startups and technology providers. This talk showcases proven frameworks that span strategy, R&D, and full-stack deployment, demonstrating how quantum computing and quantum sensing are showing promise to solve real business problems and delivering measurable value to clients across industries on their journey to becoming quantum-ready.

Biography:

Karishma Khanna is the Managing Director — Ventures & Emerging Ecosystem at Accenture, working at the intersection of technology, business value, and customer experience. An alumna of IIM Bangalore, she partners with large enterprises, mid-market organizations, SMEs, and startups to translate strategy into measurable performance across operating models and technology roadmaps. A strong advocate of industry-academia collaboration, she leads the establishment of Centers of Excellence with leading academic institutions to co-build joint intellectual property—uniting Accenture's enterprise expertise with academia's research depth to create proprietary frameworks, solutions, and innovations that drive lasting value for the ecosystem.

LinkedIn :
https://www.linkedin.com/in/karishma-khanna-3191128/

Biography:

Syam is a Technology Innovation Senior Manager at Accenture, specializing in Next Generation Computing and Sensing. He leads a high-performing team focused on building Accenture India's quantum capabilities, consistently delivering award-winning innovation prototypes. A strong advocate of industry-academia research, his collaborative work with the Indian Institute of Science (IISc) includes patented breakthroughs in quantum-enhanced machine learning. As a World Economic Forum Fellow, Syam contributed to global quantum strategy and thought leadership, guiding organizations through the shift to quantum-enabled technologies while advancing the ecosystem through expert panels and advisory boards.

LinkedIn :
https://www.linkedin.com/in/syamasundar-gopasana/

Title

Closing the Map Gap with Quantum Magnetic Navigation

Speaker

Dr. Subhajit Roy

The Chief Executive Officer of the QMD Foundation

Abstract :

As global reliance on satellite navigation grows, the vulnerability of GPS in electromagnetically contested environments has become a critical strategic crisis. Conventional alternatives are often too bulky, costly, or inaccurate to deploy effectively. This talk introduces QuBeats' innovative approach to closing this "Map Gap" using advanced quantum sensing. We will explore thedevelopment of an industrial-grade Quantum Navigation System, powered by ultra-sensitive TMR-based magnetometers and optically pumped rubidium atomic vapor cells. By leveraging proprietary ML-driven algorithms to map and match Earth's magnetic field signatures, this MagNav technology offers an unjammable, unspoofable, and highly precise alternative for autonomous navigation and defense

Biography:

Dr. Subhajit Roy is an experienced Physicist with a strong foundation in Applied Physics and materials science engineering. He earned his Bachelor's from the University of Calcutta, his Master's from the Central University of Karnataka, and his Ph.D. in Applied Physics from the University of Paris-Saclay (France) as a Marie Curie Fellow. A Horizon Europe grant later funded his post-doctoral fellowship at the International Iberian Nanotechnology Laboratory (Portugal). Leveraging 7+ years of experience in cleanroom and nm-scale device fabrication, he made significant contributions to ultra-sensitive magnetic sensors and neuromorphic computing. Now an R&D Scientist at QuBeats, Dr. Roy engineers unjammable quantum magnetic navigation systems (MagNav) for GPS-denied environments

LinkedIn :

https://www.linkedin.com/in/roy-subhajit-phd

https://www.linkedin.com/company/qubeats

Title

Quantum Design role in Accelerating the commercialisation of Quantum.

Speaker

Mandar Kumthekar

Technical Sales Manager at Quantum Design India

Abstract :

Quantum Design (QD) is a leading provider of advanced scientific instrumentation and research technology solutions. Founded in 1982, the company has a strong presence in quantum transport and measurement segment. With a broad network of partner companies, QD supports diverse quantum applications. It offers solutions through its own materials characterization system and ultra-low-temperature cryostats, along with partner products such as Lakeshore and Montana Instruments. Following the acquisition of Oxford NanoScience, QD has strengthened its role in providing cryogenic environments for superconducting and spin-based quantum computing, enabling scalable qubit systems. With a skilled team and strong service support, QD is committed to advancing quantum technologies in India as supplier and through collaborations.

Biography:

Technical Sales Manager at Quantum Design India, Mandar brings over five years of experience in driving business growth within advance scientific instrumentation. With background in Physics and recent work experience, he specializes in understanding complex research needs and translating those into tailored technical solutions for academia and industry.

LinkedIn : https://www.linkedin.com/in/mandar-kumthekar-093307110/

Title

Enabling the Future of Quantum Computing in India

Speaker

Nishanth G

Technical Sales Manager at Quantum Design India

Abstract :

VT Vacuum Technologies Pvt Ltd has played a pivotal role in strengthening India's quantum ecosystem by supplying ultra-high vacuum, cryogenic, and quantum computing hardware from leading global manufacturers, enabling research institutions, universities, and advanced technology industries to accelerate their quantum initiatives.

LinkedIn

https://www.linkedin.com/company/108144246/admin/dashboard/


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