

Thursday, January 28th, 2021 10:00AM-11:00AM (PST)

Join URL: <https://ucsd.zoom.us/j/99495963967>

Introduction and Materials for Quantum Communication

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Abstract

Quantum communication with single photons is considered to be a near-term technology, which can be implemented at room temperature, and has been demonstrated worldwide between distant cities. Secure high-speed transmission of encrypted data in conventional communication channels is the goal, using low-speed quantum communications for transmission of the encryption code between the sender and the receiver. The first part of the talk will focus on the basic protocols of photonic quantum communication and a summary of the current technology. The second part of the talk will focus on UCSD's approach to quantum communication and materials-related challenges. Topics such as quantum computing, quantum sensors, and UCSD's materials studies in these areas will be summarized.

Bio

Dr. Bhagawan Sahu is a visiting scholar at the Department of Chemistry and Biochemistry, UCSD. Until recently, he was with GLOBALFOUNDRIES USA, NY where he held several positions in Corporate Research and Technology developments. In GLOBALFOUNDRIES, he championed and managed multiple joint development projects with universities and with the Semiconductor Research Corporation (SRC). He was awarded in 2014 & 2018, a SRC outstanding industry liaison award. Dr. Sahu received a Ph.D. in Physics in 2000 and until 2011, he held a research staff position at the University of Texas at Austin in the EE department. His current research interests are in the materials, structures, processes, devices and circuits applicable for emerging areas in quantum technologies, In-memory (or Neuromorphic) computing for Artificial Intelligence & Machine Learning workloads and Silicon Photonics.

Please email imdd-directors@eng.ucsd.edu if you have any questions.