

The Silicon Valley EPS chapter invites engineers around the world to their free virtual technical seminars scheduled for 2021. For an updated full listing, visit <http://www.ieee.org/scveps>. Links to past events held so far this year (e.g., HIR Symposium, Technical Working Group meetings, and follow-up discussion sessions) can also be found on the [Chapter's website](#).

Luu Nguyen
Director of Programs, EPS Silicon Valley Area Chapter

April 22, 2021 – Noon Pacific: “[Packaging and interconnect technologies for cryogenic and quantum systems](#),” M. Hamilton, Auburn University.

May 6, 2021 – Noon Pacific: “[Results of low-temperature polyimide processing for interconnect RDL in next generation 3D advanced IC backend applications](#),” Z. Karim, Yield Engineering Systems.

May 13, 2021 – Noon Pacific: “[3D packaging for superconducting qubits](#),” R. Das, MIT Lincoln Lab.

June 10, 2021 – 8:00 am Pacific: “[Bonding technology for the next generation integration schemes](#),” J. Burggraf, EV Group.

June 17, 2021 – 8:00 am Pacific: “[Scalable highly-integrated photonics packaging for the 5G world: From datacenters to drones](#),” J. Duis and B. Snyder, PHIX.

July 8, 2021 – Noon Pacific: “[Use of flash lamps to achieve non-equilibrium soldering and assembly using conventional solder alloys](#),” R. Ghosh, Novacentrix.

July 15, 2021 – Noon Pacific: “[Electromigration failure of solder interconnects under non-DC conditions](#),” C-U Kim, UT Arlington.

August 12, 2021 – Noon Pacific: “[Qualification of robo-taxi: environments and failure modes for autonomous vehicles](#),” H-L Shi, Lyft.

August 19, 2021 – Noon Pacific: “[Package technology, design, and methodology challenges and solutions for high bandwidth electronic systems](#),” K. Aygun, Intel.

September 9, 2021 – Noon Pacific: “[Chiplet in wafer technology for the development of III-V RF ICs](#),” F. Herrault, HRL Laboratories.

September 16, 2021 – Noon Pacific: “[Sustainable electronics – From dumped e-waste to a circular economy: What is needed?](#)” M. Paulasto-Krockel, Aalto University.

October 7, 2021 – Noon Pacific: “[Integration of an optoelectronic, flexible neural stimulator for implantable retinal prosthesis](#),” Y-H Liu, Nanovision Biosciences.

November 11, 2021 – 5:00 pm Pacific: “[Quantum fiber-optic interconnect technology for quantum networks](#),” B. Lee, Senko Advanced Components.

December 16, 2021 – Noon Pacific: “[Growth in semiconductor packaging and assembly: Are we in another “Roaring 20s”?](#)” J. Vardaman, TechSearch Int.

What's up on Quantum Computing?

Much has been in the news in the past few years about Quantum Computing (QC). The QC landscape has many established companies and start-ups offering different quantum technologies (e.g., superconducting, optical, ion trap, silicon, etc.). Packaging for QC, however, has received much less visibility in the technical press. For instance, ECTC has received only a few QC-related papers in the past few years.

IEEE has several activities in the QC arena. To leverage and collaborate with these existing initiatives, EPS has also acted as technical co-sponsor, as shown below.

IEEE Quantum (<https://quantum.ieee.org/about>): This is an IEEE initiative launched in 2019 by the IEEE Future Directions Technical Committee, charged with bringing knowledge, resources, and opportunities in emerging technologies within IEEE. IEEE Quantum serves as the IEEE leading community for all projects on quantum technologies. Within the current landscape of quantum technologies, key activities include identifying challenges and opportunities, workforce development, and engagement with the quantum community at large.

IEEE Quantum Week (<https://qce.quantum.ieee.org/>): The IEEE International Conference on Quantum Computing and Engineering (QCE) bridges the gap between the science of computing and the development of a QC infrastructure. The inaugural week-long conference was held successfully last October 2020, with over 800 attendees from 45 countries and representation from 225 companies. IEEE Quantum Week 2021 will include QCE as a virtual event with a week-long program featuring keynotes, tutorials, workshops, technical tracks, panels, posters, “Birds-of-Feather” sessions, and exhibits. Key topics covered include architectures, software infrastructure, benchmarks and performance metrics, cryptography, telecommunications, sensing and metrology, photonics and optics, applications, education, and training. Potential contributions from EPS would be in the cryogenics, packaging, and interconnect aspects of hardware engineering.

Quantum Access: Quantum technology is about as mature as CMOS was in the early 1980s. That was when ARPA (now DARPA) introduced MOSIS (MOS Implementation Service) to make chip design widely accessible, with many designs using generic design rules combined into a single fab run. A Working Group is considering extending the MOSIS operational model to a qubit-equivalent multi-project wafer. Commercial users and researchers from universities and national labs will be able to combine designs into a single mask set that can be manufactured by a foundry that supports generic design rules.

IEEE Quantum Education - Workforce Development

(<https://quantum.ieee.org/education/workforce-development>): This flagship program offers courses and seminars taught by current quantum practitioners from academia, national labs, and industry. Similarly, there is an accompanying Podcast Series of interviews with top subject matter experts covering topics from quantum engineering, benchmarking, standardization, and industry trends.

Luu Nguyen
EPS Representative
Steering Committee of IEEE Quantum & IEEE Quantum Week