

## **Robust and Energy-Efficient VLSI Silicon Photonics for Communications and Computing**

**Dr. Di Liang**

Large-Scale Integrated Photonics Lab  
Hewlett Packard Enterprise

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**Abstract:** The ending decade of 2010s is an era when cloud-driven data centers and photonic interconnects, particularly silicon photonics, enable each other to scale. Same promise is held to develop interconnect solutions with energy efficiency, large bandwidth, low latency, and affordable cost for next-generation high-performance computing. To fulfil this mission, innovative materials, device structures, integration platform, and link architecture were extensively studied in Hewlett Packard Labs. I will review our recent progress in developing robust WDM transceivers on silicon and potential to extend integrated silicon photonics into the optical computing domain.

**Bio:** Di Liang is a Distinguished Technologist and Research Manager at Hewlett Packard Labs in Hewlett Packard Enterprise (HPE). He leads the advanced R&D in silicon and III-V integrated photonics for HPE's server and high-performance computing business. He is currently a principal investigator for several federally funded R&D programs. Prior to joining HP Labs, he was a research specialist at UCSB and was a core member in early-stage development of the hybrid III/V-on-silicon platform which has been commercialized successfully. He has authored and co-authored over 220 journal and conference papers with over 5200 citations, 6 book chapters, and was granted by 45 patents with another 50+ pending. He is an associated editor for IEEE Journal of Quantum Electronics and OSA Photonics Research Journals. He is a Fellow of OSA, a senior member of IEEE and a member of SPIE.