

Silicon nanophotonics – some circuit design considerations

講員： Dr. Ron Ho

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大綱： Silicon nanophotonic links have recently captured the attention of designers interested in their potential energy, area and performance advantages over electrical links. An abstracted view of a silicon nanophotonic link is straightforward, and lends itself nicely to simple and useful system models. Unsurprisingly, however, the realities of building operating photonic links contains several subtleties that are worth understanding. In this talk we will introduce photonic links, discuss their basic operation, and describe the principal physical challenges in their use. These will include resonant ring modulator tradeoffs, ring thermal stability control, efficient receiver designs, and receiver BER vs SNR.



主講人簡介：

Ron Ho is an Architect at Oracle Labs, working on topics such as off-chip and on-chip communication circuits, memory packaging and architectures, and database acceleration hardware. Previously, he was a Distinguished Engineer and Director at Sun Microsystems, where he was awarded the Sun Microsystems Chairman's Award for Innovation. From 1993 to 2003 he was with Intel Corporation, Santa Clara, CA, where he worked on CPUs ranging from the 80486 to the 3rd generation Itanium processors. He has been on the technical program committees for the IEEE International Solid-State Circuits Conference, Asian Solid-State Circuits Conference, Hot Interconnects Symposium, Asynchronous Circuits and Systems Symposium, and VLSI-Design Automation and Test Conference, and has served as guest editor for both the IEEE Journal of Solid-State Circuits and the IEEE Journal of Selected Topics in Quantum Electronics. He has co-authored over 85 technical conference and journal papers, and has over 45 U.S. patents. He is a member of Tau Beta Pi and Phi Beta Kappa, and was the 1993 IEEE Fortescue Scholar. Ron received his Ph.D. degree in electrical engineering from Stanford University, Stanford, CA.

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