SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
COLLEGE OF DESIGN AND ENGINEERING
Website: https://cde.nus.edu.sg/ece

Area: Integrated Circuits & Embedded Systems (ICES) & Signal Analysis & Machine Intelligence (SAMI)

Host: Professor Massimo Alioto

Research Seminar

TOPIC	:	**Silicon Photonics Light Engines for Highly Integrated Optical Interconnects**
SPEAKER	:	**Dr. Radha Nagarajan**
DATE	:	**Tuesday, 13 May 2025**
TIME	:	**4.00pm – 5:00pm**
VENUE	:	**E5-03-20, Seminar Room**

ABSTRACT

Large scale deployments of AI data centers have pushed the speed of optical interconnects to 1.6Tbit/s and beyond, while placing a premium on power, performance, and latency. In this talk, we will discuss the use of 3D heterogeneous integration, on silicon photonics, to enable low energy, high density, high speed optical interconnects for these deployments. Heterogeneous integration, where separately manufactured electronic and photonic components are assembled on to an active silicon photonics interposer to construct a Light Engine, is the key to highly compact optical interconnects for both scale-up and scale-out applications in AI data centers.

BIOGRAPHY

Dr. Radha Nagarajan is Senior Vice President and Chief Technology Officer, Optical Engineering at Marvell. In this role, he manages the development of the company's optical platform technology and products. Radha joined Marvell from Inphi, where he served as the Senior Vice President and Chief Technology Officer of Platforms. Concurrently, he is also a Visiting Professor at the Department of Electrical and Computer Engineering at the National University of Singapore.

Radha has been awarded more than 250 US patents and is a Fellow of the IEEE, OPTICA (the Optical Society) and IET (UK). Over his career, he was awarded the IEEE/LEOS Aron Kressel Award, IPRM (Indium Phosphide and Related Materials) Award, and OPTICA David Richardson Medal, in recognition of breakthrough work in the development and manufacturing of large scale photonic integrated circuits. Radha was named to Electro Optics' The Photonics 100 which honors the industry's most innovative people.

In 2025, he was elected to the National Academy of Engineering (NAE, US) for his contributions to the advances in high-speed lasers and photonic integration technologies. Radha holds a B.Eng. from the National University of Singapore, M.Eng. from the University of Tokyo, and Ph.D. from the University of California, Santa Barbara, all in Electrical Engineering.