

VINCENT MEYER COLLOQUIUM

Yun C. Chung



Y. C. Chung is Dean of College of Information Science & Technology at the Korea Advanced Institute of Science and Technology (KAIST), which he joined in 1994. From 1987 to 1994, he was with the Lightwave Systems Research Department at AT&T Bell Laboratories. From 1985 to 1987, he was with Los Alamos National Laboratory under AWU-DOE Graduate Fellowship Program. His current research activities include high-capacity WDM transmission systems and networks, optical performance monitoring techniques, WDM passive optical networks, and fiber-optic networks for wireless communications, etc. He has published over 500 journal and conference papers in these areas and holds over 80 patents. He has been General Co-Chair of OFC, OECC, and APOC, and currently serves as the President-Elect of the Optical Society of Korea. Prof. Chung is a Fellow of IEEE, OSA, and Korean Academy of Science and Technology.

Historical Perspectives and Future Directions of Fiber-Optic Communications

Wednesday, June 18 ■ 12:30 ■ Meyer Bldg., Auditorium 1003

Refreshments at 12:30, the lecture will start at 12:45

Fiber-optic communication has enabled ubiquitous connectivity over much of the globe. It has played, and continues to play an important role in the development of the high-speed technology in every sector of electrical engineering, from electronic and photonic devices to transmission and networking systems. It will remain in this role for the foreseeable future.

The transmission capacity of optical fiber has increased by more than a factor of one million since GTE deployed the world's first fiber-optic link running at 6.3 Mbps between Long Beach and Artesia in California in 1977. The key technical breakthroughs that have enabled this impressive progress are the development of loss-loss fibers, semiconductor lasers operating at room temperature, erbium-doped fiber amplifiers, wavelength-division-multiplexing technologies, advanced modulation formats, and digital coherent-detection techniques. As a result of these breakthroughs, the per-fiber capacity of commercial fiber-optic communication systems now exceeds 10 Tbits/s. However, it appears that we are heading for a wall since the capacity of current fiber-optic communication systems in research labs is already within about 3 dB of the nonlinear Shannon limit. To overcome this problem, much effort is being expended on space-division-multiplexing. Healthy skepticism remains about whether or not this technology will ever be cost effective. To accommodate the ever-increasing data traffic in the coming years, it is also critical to develop ultrahigh-speed optical and electronic devices, photonic integration techniques, silicon photonics, as well as extremely high-capacity routers. So, in the fiber-optic communications, there are still a lot of things to do.

Professor Chung will also deliver an additional lecture

Fiber to The Home Technologies (FTTH) - Past, Present and Future

Tuesday, June 17 ■ 11:30 ■ Meyer Bldg., Room 861

Refreshments at 11:00

For further information see:

<http://webee.technion.ac.il/Vincent-Meyer-Colloquium>