



THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering

Seminar

Wonders of Light and Photonics---Reflections on how Bell Labs' Laser and Photonics R &D changed the world

by

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Date : 19 October, 2015 (Monday)
Time : 11:00am - 12:00noon
Venue : Room 833, Ho Sin Hang Engineering Building
The Chinese University of Hong Kong

Abstract

Year 2015 has been declared by UNESCO as the International Year of the Light, or IYL2015. It is also the 50th anniversary of the initial pioneering work on demonstrating the potential of low loss silica glass based optical fiber for long-distance optical transmission started by Dr. Charles Kuen Kao at STL in UK in 1965. Dr. Kao received the 2009 Nobel Prize in physics.

Since the 1960's the invention of lasers by Prof. Charles H. Townes and others have triggered significant worldwide R and D interest in photonics technologies for optical guided laser light communication systems, including the pioneering effort of Dr. Kao in 1965 on low-loss optical fiber waveguides. Since then, lasers and photonics R and D at Bell Labs and other research labs worldwide have collectively succeeded in developing very-high-capacity optical fiber communications networks for global broadband information infrastructures. Today broadband optical access with FTTH (Fiber-to-the-Home) is also a reality in many regions of the world. This has started the unprecedented great broadband transformation of the modern societies. Broadband high-speed access to Global Internet has now changed the world beyond expectations. This significant achievement was accomplished in 55 years, a very short time duration in the 5000 years of human history.

This talk is for a general audience interested in the wonders of light, in IYL2015. I will use some selected examples to present a personal and historical perspective on the long-term impacts of Bell Labs' fundamental and applied research on lasers and photonics, on the broadband transformation, and speculate on the future promise of photonics for biomedical sciences such as biophotonics.

Biography

Prof. Lin is now retired after 40+ years of research and teaching in the field of laser photonics technologies and broadband optical fiber communications systems. He was with AT&T Bell Labs, Holmdel, NJ and Bellcore, Red Bank, NJ for many years. He was the first to originate the idea and experimental demonstration of dispersion-shifted single-mode fibers (DSF) as well as dispersion-compensation fibers (DCF). He joined Bellcore in 1986, as Director of Broadband Lightwave Systems Research. From 2003 to 2007 he was with Chinese University of Hong Kong (CUHK) as Chair Professor of Photonics and Director of Center for Advanced Research in Photonics, and as a Professor of both the Electronic Engineering and Information Engineering departments. From April 2008 to April 2010 he was a Nanyang Professor at the School of EEE at Nanyang Technological University (NTU) in Singapore and also served as Director of Photonics Research Center. From 2011-2013, he was a short-term visiting professor at KTH (Royal Institute of Technology), at Kista, Stockholm, Sweden, (2011), at Technical University of Berlin, Germany (2012), and at Institute of Femto-ST, in UCF, Besancon, France (2013). He has also been a Guest Chair Professor of National Chiao-Tung University and National Sun Yat-Sen University in Taiwan and Bao Yu-Gang Guest Chair Professor of Zhejiang University in China. Dr. Lin is a Life Fellow of IEEE's Photonics Society and Fellow Emeritus of the Optical Society of America.

**** ALL ARE WELCOME ****