

Munushian Visiting Seminar Series

Monday, December 3, 2007



Dr. Amnon Yariv

California Institute of Technology

"Slow Light and Dark Modes"

Hedco Neuroscience Building (HNB 100)

Lecture 3:00 PM

Hosted by Prof. Hossein Hashemi

Abstract

The talk will consider the theoretical and experimental basis for the recent interest in major slowing down of the group velocity of light (Slow Light). It will review the phenomenon in the atomic domain where it is linked intimately to that of Electromagnetically Induced Transparency (EIT). The emphasis will be on Slow Light in artificial dielectric structures such as Coupled Resonators Waveguides (CROWS) and on recent theoretical results from our group on Slow Light and Dark Modes phenomena in bi-periodic optical waveguides.

Bio

Amnon Yariv received the B.S., M.S., and Ph.D. degrees in electrical engineering from the University of California, Berkeley, in 1954, 1956, and 1958, respectively. In 1959, he joined Bell Telephone Laboratories, Murray Hill, NJ. In 1964, he joined the California Institute of Technology (Caltech), Pasadena, as an Associate Professor of electrical engineering, becoming a Professor in 1966. In 1980, he became the Thomas G. Myers Professor of electrical engineering and applied physics. In 1996, he became the Martin and Eileen Summerfield Professor of applied physics and Professor of electrical engineering. On the technical and scientific sides, he took part (with various co-workers) in the discovery of a number of early solid-state laser systems, in the original formulation of the theory of nonlinear quantum optics; in proposing and explaining mode-locked ultrashort-pulse lasers, GaAs optoelectronics; in proposing and demonstrating semiconductor-based integrated optics technology; in pioneering the field of phase conjugate optics; and in proposing and demonstrating the semiconductor distributed feedback laser. He has published widely in the laser and optics fields and has written a number of basic texts in quantum electronics, optics, and quantum mechanics.

Dr. Yariv is a member of the American Academy of Arts and Sciences, the National Academy of Engineering, and the National Academy of Sciences.