Colorado State University's Information Science and Technology Center (ISTeC)

Presents <u>two</u> lectures by

Dr. Henryk Temkin

Electrical and Computer Engineering
Texas Tech University

ISTeC Distinguished Lecture

"Light Emitting Diodes Based On Nitride Semiconductors – From Red To Ultraviolet"

Thursday, March 24, 2005

4:10 – 5:00 p.m., Engineering 120 (Hammond Hall)
Reception prior at 3:30

Electrical & Computer Engineering Lecture

"Waveguide Optics and MEMS - From Wavelength Division Multiplexing to Generation of THz bursts"

Friday, March 25, 2005

1:30 – 2:30 p.m., Clark C337

ABSTRACTS

"Light Emitting Diodes Based On Nitride Semiconductors – From Red To Ultraviolet"
Development of nitride semiconductors has enabled revolutionary improvements in light emitting diodes (LEDs). These devices are being transformed from little glowing indicator lights on electronic equipment to ultra-efficient light sources replacing incandescent light bulbs with dramatic potential for energy savings, improved reliability, and new applications. This talk will review some of the physics and materials science behind these developments and focus on recent research on extending the emission wavelength of LEDs to deep ultraviolet.

"Waveguide Optics and MEMS - From Wavelength Division Multiplexing to Generation of THz bursts"
We describe arrayed waveguide grating multiplexers based on low loss and low birefringence silica glasses. The initial goal of fabricating these devices in the CMOS foundry environment has resulted in a design providing easy access to the optical field in the grating. This has turned out to have a number of advantages allowing new experiments in waveguide optics. The use of a composite thermally-compensated mirror results in athermal operation of silica-on-silicon multiplexers. The use of an array of digital mirrors allows us to create direct space-to-time pulse shapers capable of producing bursts of THz pulses.

Dr. Henryk Temkin is a Professor of Electrical Engineering at Texas Tech University in Lubbock, Texas, a holder of a Chair endowed by the Maddox Foundation, and a Director of the Nano Tech Center. His current research interests include nanoscale engineered materials, ultraviolet light emitting diodes, integrated optics.

Dr. Temkin received a PhD in Physics from Stevens Institute of Technology. From 1977 to 1992 he was a Distinguished Member of Staff at Bell Laboratories at Murray Hill, NJ, where he worked on lasers for optical communications and epitaxial technology of semiconductor devices. He was a Rockwell-Anderson professor of Electrical Engineering at Colorado State University between 1992 and 1996. Dr. Temkin was elected a Fellow of IEEE for his contributions to the field of quantum well lasers. He is widely published, has 24 patents and patent applications, and is an editor of a recent book on vertical cavity surface emitting lasers.

Host: To arrange a meeting with the speaker, please contact Dr. Carmen Menoni at (970) 491-8659/5557 or carmen@engr.colostate.edu.

ISTeC (Information Science and Technology Center) is a university-wide organization for promoting, facilitating, and enhancing CSU's research, education, and outreach activities pertaining to the design and innovative application of computer, communication, and information systems. For more information please see ISTeC.ColoState.edu.