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Tri-State Section

OPTICAL SOCIETY OF AMERICA

# Optical Thin Films in DWDM

Presented by
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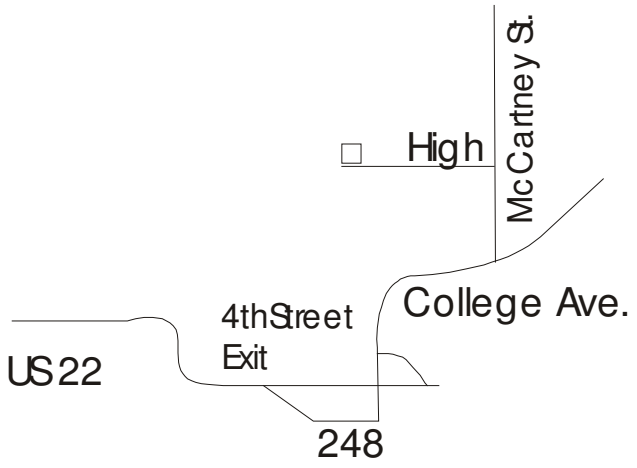
Agere Systems

7:30 pm, May 7th, 2002
Lafayette College, Easton
Room 400
Alumni Hall of Engineering (AHE)
Open to the Public

**Directions:** From Route 22 Heading east. Take the 4th street exit marked for Lafayette College. Turn left onto Bushkill Street (248E) and left again onto College Avenue. Proceed up the hill and take a left onto McCartney and then left onto High Street. After Markle Hall, there is public parking available to the right just before you reach the Alumni Hall of Engineering. AHE is the building under construction. Enter through the double doors at the far side of the building. Go up 1 floor. Due to construction no elevator is presently available.

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## Optical Thin Films for DWDM

There is an ever-increasing demand for communications bandwidth in our world today. A single communication channel in an optical fiber has enormous capacity, currently up to 10 Gb/s in commercial systems. To greatly increase this capacity at low cost, multiple channels with differing carrier wavelengths are being transmitted through the same fiber. The combination of these channels is known as wavelength division multiplexing or WDM. In the region around 1,550 nm, the channel spacing is based on a frequency of 50 GHz or 0.4 nm. Subsets of channels with spacing 100 GHz or 200 GHz are commonly used. These spacings are so close and the technical problems so demanding that the term dense wavelength division multiplexing (DWDM) is used. A popular component for adding a channel (multiplexing) or removing it (demultiplexing), is a thin-film narrowband filter that transmits one channel and reflects all others. The production of such filters in sufficient volume is the most demanding task ever undertaken by the optical thin-film industry. The goal of this talk is to give an overview of how a DWDM system works, where optical thin film filters fit in, and what it takes to make them.

**David G. Coult** holds a B.S. in Optical Engineering from the University of Rochester, an M.S. in Materials Science from Lehigh University, and has almost 30 years of experience in the design and fabrication of optical thin films. He joined AT&T Bell Laboratories in 1980 to design and fabricate optical filters for early wavelength division multiplexing systems and holds five patents in that and related areas. He is currently Senior Manager of the InP Chip Fabrication and Garnet Technology Engineering Department at Agere Systems.