

# SINAM NANO SEMINAR

Center for Scalable and Integrated  
Nano Manufacturing (SINAM)

presents



## Optical Field Synthesis and Analysis Using Diffractive Optics

**Prof. Byoung-ho Lee, School of EE, Seoul National University**

Friday, January 26, 2007

3:00 - 4:00 pm

1165 Etcheverry Hall

(Cookies and refreshments provided at 2:45 PM)

### Abstract

This talk will consist of two parts – optical field synthesis and analysis. Prof. Lee will discuss the design methodology of diffractive optical elements, especially to generate three-dimensional optical fields or intensity profiles. Genetic feedback tuning loop will also be explained, which can enable dynamic optical pattern generation compensating aberrations of optical systems and optimizing dynamic spatial light modulator responses. Prof. Lee will also discuss pseudo-Fourier modal analysis (PFMA) to simulate nano photonic structures. The use of PFMA and rigorous coupled mode analysis (RCWA) with parallel computing will be discussed and several simulation examples will be shown such as beaming of laser using surface plasmon resonance and near-field holography.

### About Prof. Lee

Byoung-ho Lee received his PhD degree from EECS, UC Berkeley in 1993. Since 1994, he has been with the School of Electrical Engineering, Seoul National University, Korea, where he is now a full professor. He has published more than 180 international journal papers and more than 300 international conference papers including more than 30 invited papers. His research fields are diffractive optics, three-dimensional display and fiber lasers.

**\*\*\*View the full abstract and bio for this seminar at <http://www.sinam.org>\*\*\***

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