

**STEVENS INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING**

**Wednesday, December 12, 2007
Carnegie Room 315, Time 1:30 pm**

***HAR-MEMS and Its Applications in Bio and Microfluidics at
KAIST***

Professor Seung Seob Lee
Department of Mechanical Engineering
Korea Advanced Institute of Science and Technology (KAIST)
Daejeon, Korea

This talk consists of two parts. In the first part of the talk I will present recent process development in HAR (high aspect ratio) MEMS including LIGA and LIGA-like process with PMMA and SU-8. Included in the discussion process development results will be presented for a micro actuator embedded deep X-ray mask, micro lenses and array, and a micro needle and array. In the second part of the talk I will present the applications of these techniques to microfluidics and BioMEMS at the KAIST Micro Mechanical System Technology Lab (MMST). In particular, application results in microfluidics and bioMEMS are presented for a micro chaotic mixer, a micro SAR mixer, an oxygen pump/generator, a cell counter and focusing device, and a DNA manipulator device. The talk also includes the present status of MEMS/NANO R&D in Korea.

Professor Seung Seob Lee is currently a Professor in the Department of Mechanical Engineering at the Korea Advanced Institute of Science and Technology (KAIST) and is the head of the Micro Mechanical System Technology Lab. Professor Lee received his PhD in MEMS from UC Berkeley in 1995. He worked as a Principal Engineer at the Samsung Advanced Institute of Technology from 1996-1997, and as an Assistant and Associate Professor at Pohang University of Science and Technology from 1997-2003, and joined the faculty at KAIST in 2003. Professor Lee is currently a Visiting Scholar at Stevens.

For more information, please contact Prof. Frank Fisher at Frank.Fisher@stevens.edu or 201-216-8913