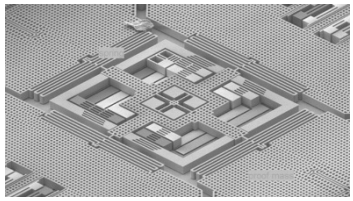
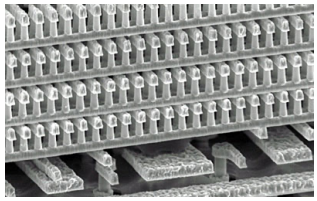
EE 527 Micro/Nano Fabrication



Instructor	Prof. Mo Li	**Office**	EEB M246
Tel	206-616-6966	**Email**	moli96@uw.edu
Lectures:	TBD	**Room**	TBD

Synopsis

The success of microelectronics industry and the prospect nanotechnology and quantum technology all have benefited and rely on the advancement fabrication technology and tools. Although modern tools are highly automatic, understanding the behind-the-scene working principles is critical to your research and innovation of the next-generation technology. Research in university labs also requires the fundamentals for customization and maintenance of the tools and development of process for fabricating novel devices involve unconventional materials.

This course will provide a comprehensive introduction to micro/nano fabrication technology with a focus on the university research setting. The lectures will be coupled with laboratory sessions for first-hand training and experience in WNF's clean room. Following topics will be covered:

Lecture Topics
Overview
Historical facts, Moore's law, micro- and nano-technology
Hot Process
Diffusion, Ion implantation, oxidation, annealing, rapid thermal process
Pattern generation and transfer
Optical lithography, electron beam lithography, photoresist, novel lithography methods, plasma process, dry and wet etching
Thin film deposition
Physical vapor deposition, chemical vapor deposition, atomic layer deposition, epitaxial growth
Process integration
MEMS, system in package, wafer scale integration, optoelectronics, multi-project wafer

Textbook
TBD

Grading (Tentative)
Homework: 50% Final: 25% Lab: 25%