

MS 591 Emerging Nanofabrication Technology

Summer, 2017

Instructor: Prof. Jung, Yeon Sik

3-0-3

Course description

Nanofabrication is the design and manufacture of devices with dimensions measured in nanometers. This lecture covers the interesting and practical examples of nanofabrication technologies that are currently under development. The underlying principles and applications of nanofabrication technologies will be given. The advantages and limitations of top-down and bottom-up approaches are extensively discussed through detailed and in-depth reviews on state-of-the-art techniques.

Class hours: Mon, Wed 1:00 – 3:00 PM, Tue, Thu, Fri 1:00 – 4:00 PM. This class will be operated as an Education 3.0 class. (VOD online lecture + off-line class)

Class Room: W1-1, #2427

Contact Info:

Tel: 042-350-3328, Email: ysjung@kaist.ac.kr

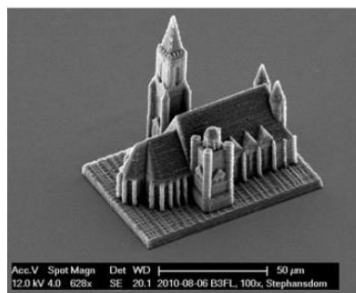
Office hours: Anytime by e-mail appointment

Instructor's office: W1-1, 1404

Teaching assistant:

Gunho Lee (gunho.lee@kaist.ac.kr)

Nano Castle



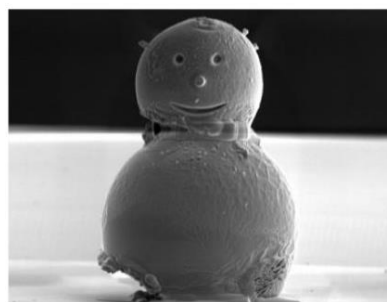
Nano Obama



Atom Boy



Nano Snow-Man



Course contents

Period	Contents	Period	Contents
1 st Week	Review of top-down and bottom-up nanofabrication techniques	3 rd Week	Charged beams: E-beam and focused ion beam lithography
1 st Week	Photons: (I) Optical lithography – Part I	3 rd Week	Replication: Nanoimprint and soft lithography
2 nd Week	Photons: (I) Optical lithography – Part II	4 th Week	Self-assembly: (I) Colloidal nanocrystals
2 nd Week	Photons: (II) EUV lithography	4 th Week	Self-assembly: (II) Polymers
2 nd Week	Photons: (II) EUV lithography	4 th Week	Final Exam

Evaluation:

- ✓ Class participation (30%)
- ✓ Assignment (10%)
- ✓ Presentation (10%)
- ✓ Final Exam (50%)