



## MS591: Emerging Nanofabrication Technology (Edu 3.0)

🕒 Class Time

MTWTh 14:00 - 17:00

📍 Location

To be announced

📖 Credit

3

👤 Instructor

Professor Jung, Yeon Sik ([ysjung@kaist.ac.kr](mailto:ysjung@kaist.ac.kr)), (Prof.Seungbum Hong, Steve Park)  
Office: W1-1, #1404 (by email appointment); Tel: 042-350-3328

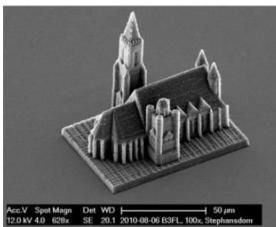
📄 Required Materials

### Course Summary

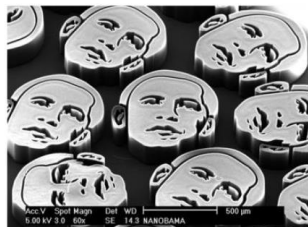
#### ★ Course description

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. Various types of devices based on 1-dimensional and 2-dimensional structures such as carbon nanotubes, graphene, and so on will also be covered

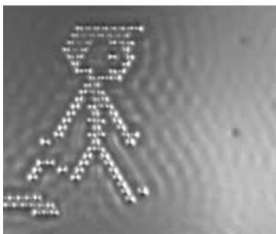
Nano Castle



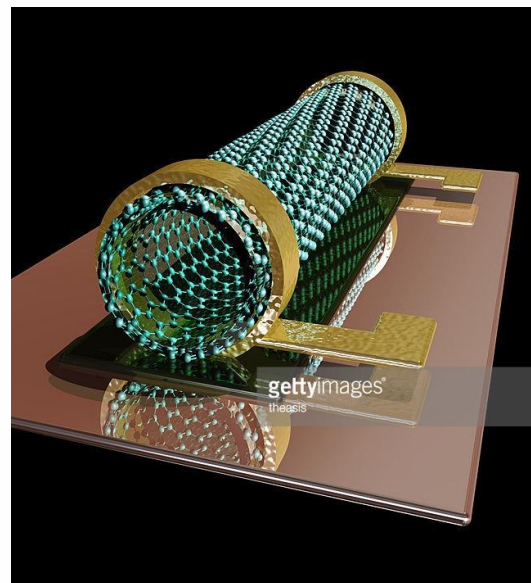
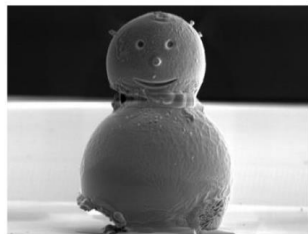
Nano Obama



Atom Boy



Nano Snow-Man



## ★ Course Content

Period	Contents	Period	Contents
1 <sup>st</sup> Week	Review of top-down and bottom-up nanofabrication techniques	3 <sup>rd</sup> Week	Photons: (I) Optical lithography and EUV lithography
1 <sup>st</sup> Week	Transistor fabrication using 1D and 2D nanostructures	3 <sup>rd</sup> Week	Charged beams: E-beam and focused ion beam lithography
1 <sup>st</sup> Week	Carbon nanotube-based pressure sensor for electronic skins	4 <sup>th</sup> Week	Replication: Nanoimprint and soft lithography
2 <sup>nd</sup> Week	Fundamentals of nanoscale imaging	4 <sup>th</sup> Week	Self-assembly: (I) Colloidal nanocrystals and Polymers
2 <sup>nd</sup> Week	Advanced Imaging of nanostructures	4 <sup>th</sup> Week	Final Exam

**Course Evaluation**

- Class participation (20%)
- Assignment (20%)
- Final Exam (60%)