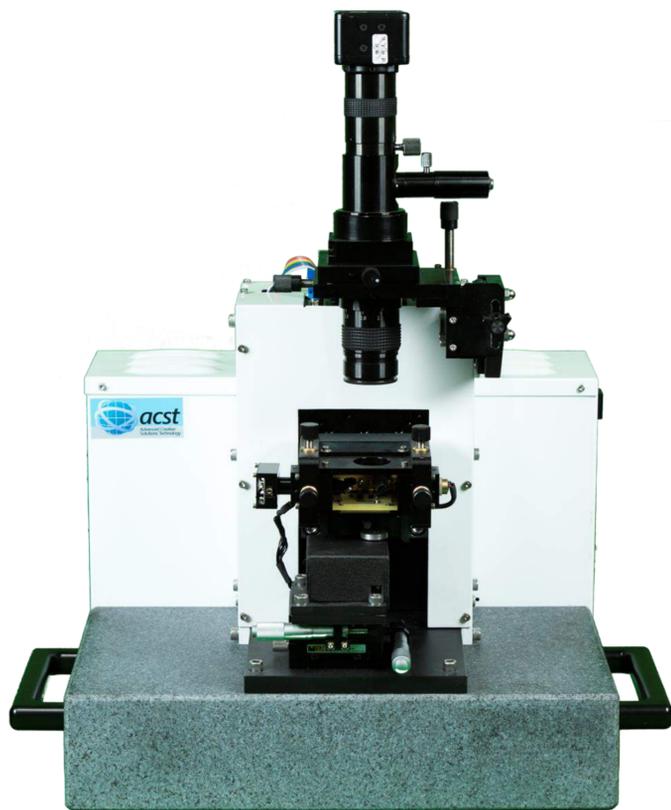
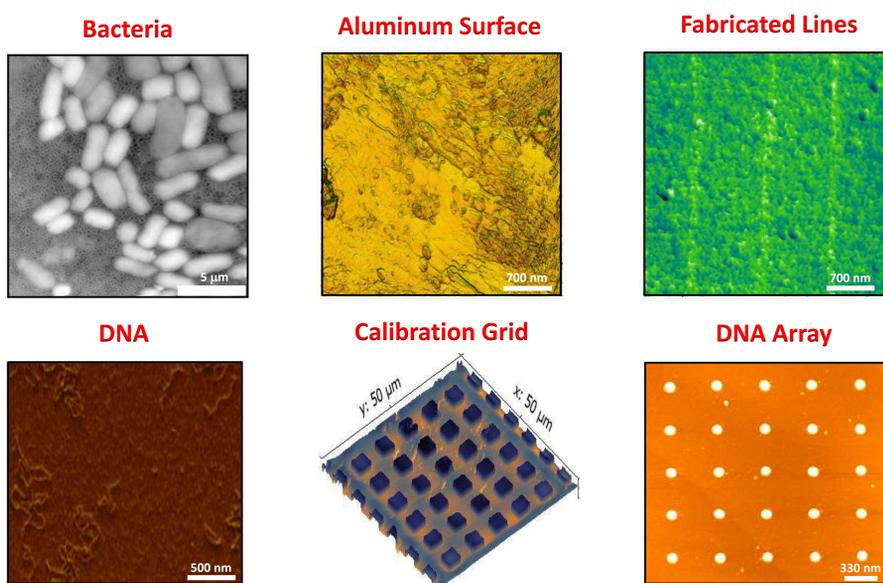


Introducing nano-SCIENTIST, a comprehensive, hands on program designed to educate students and prepare tomorrow's workforce for the multidisciplinary fields of science and technology at the nano & micron scale. The program has been carefully crafted to utilize labs and hands on approach to master complex scientific concepts and techniques. The approach ACST brings to nanotechnology education is not one-program fits all, but a customized combination of instruments and labs for your institution's vision and requirements. All instruments included in this education program can be utilized for prototyping and also are being use for research applications.



## Atomic Force Microscope

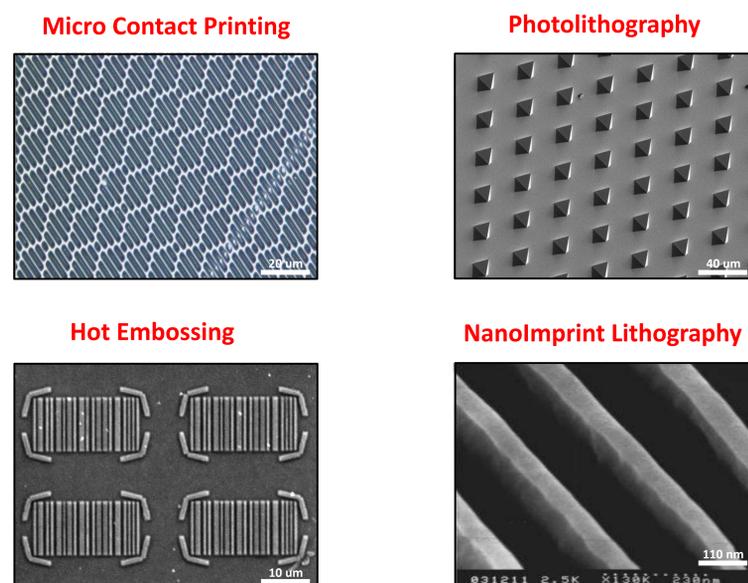


The ACST Atomic Force Microscope (AFM) is a state-of-the-art instrument designed in a bottoms-up approach for both ease-of-use and robustness. It is a truly multidisciplinary metrology and industry standard tool which is now finally easy enough to introduce the beginner to the nanoscale, and ready for advanced research as well.

- Modes: Vibrating, non-vibrating, phase and LFM
- 50-micron scan range
- XY drive resolution: 1 nm open loop
- Z drive resolution < 0.1 nm
- Optional: Environmental cell
- Optional: Conductive AFM, Lithography software



## COSMOS nanoFAB



ACST's COSMOS nanoFAB is one of its kind, an advanced and multi-purpose desktop micro and nanofabrication instrument that will enable researchers to take their existing work in different directions and will allowing educators to lay a strong foundation for students to master industrially useful micron and nano fabrication techniques.

- UV Photolithography < 5.0 micron feature resolution
- Micro Contact Printing (μCP) < 0.5 μm feature resolution
- Nanolmprint Lithography (NIL) < 100 nm feature resolution

Educational concepts covered in the program include but not limited to surface chemistry, material science, industrial applications, electronic components, fabrication of semiconductor devices, bio-molecule immobilization and sensing.

## Scanning Electron Microscope



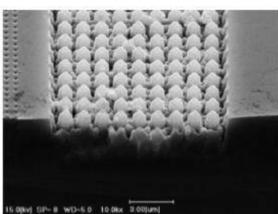
A truly state-of-the-art bench top SEM used for more demanding imaging and characterization. The COXEM 20 offers a high resolution and convenient usage so students can acquire high magnification images fast.

- Magnification: ~ x 80,000
- Resolution: 7 nm
- XY Stage: 35 x 35 mm<sup>2</sup>
- Stage Rotation: 360°
- Sample size: 60 mm (D), 45 mm (H)
- Vacuum: Turbo Molecular Pump

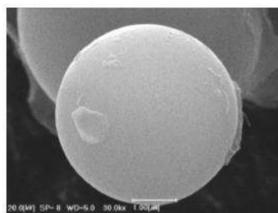
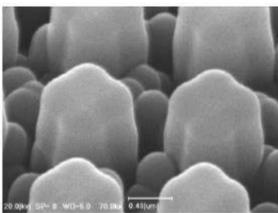
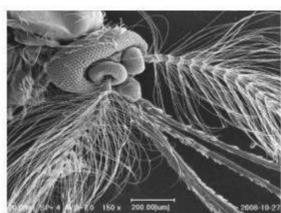
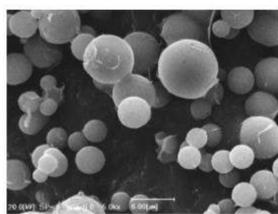
Mosquito



Silicon Wafer



Particles



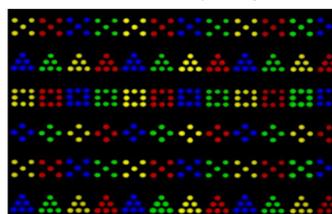
## Fluorescent Microscope



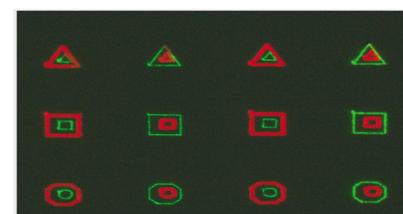
ClearPix is a fluorescent/optical microscope that image variety of samples including biological specimens and it is part of the nano-SCIENTIST program. Widely used in scientific experiments, inspection, pathological tests, clinical diagnosis and other related fields.

- 10x, 20x, 40x and 100x objectives
- Reflected light fluorescence
- Resolution at least 1 micron
- Filters: rhodamine/red 530, alexia 488/FITC, and DAPI/ blue
- Video camera (optional)

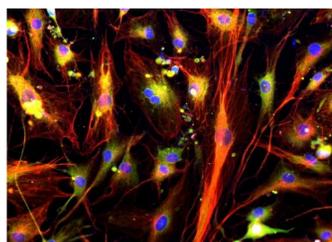
Protein Multiplexing



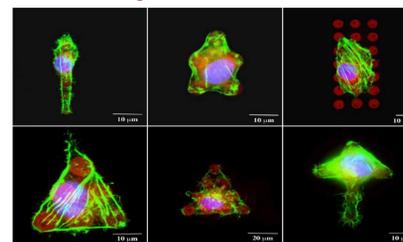
Phospholipids



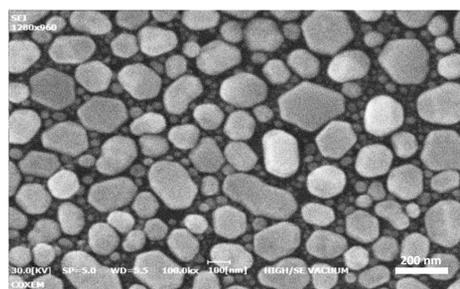
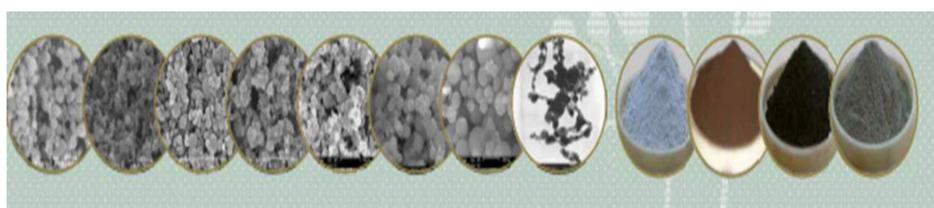
Cell Imaging



Single Cell Immobilization

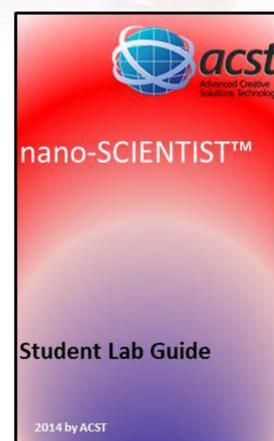


## Nanocolloid 40PC



- One step method of making nano colloids
- Extensive list of Nanoparticles Al, Ti, W, Fe, Co, Ni, Cu, Ag, Zn, Sn, Pt, Au, etc
- Alloy Nanoparticles: Cu-Ni, Cu-Zn, Fe-Ni, Sn-Bi, Sn-Ag-Cu, etc
- Environmental Friendly ~ No chemical by-products.
- Applications: nanocolloid fluids, conductive inks, conductive polymers, conductive paste, painting and coatings, plastic additives are some of the product that can be enhance or modify.

## Student Lab Guide & Textbook



- The e-book lab is details experiments and concepts to explain specialized fabrication techniques and imaging.
- Labs are provided with consumables, where the students will receive their entire lab instructions base on the labs to be practice and theory teaching.
- A commercial textbook specialized in the fields of micro and nanotechnology will be provided.
- Professor e-training and support available.