



MARYLAND NANOCENTER  
**FABLAB**  
MICRO AND NANO FABRICATION LABORATORY

[www.fablab.umd.edu](http://www.fablab.umd.edu)

A cutting-edge complex for nano- and micro-fabrication

Supporting research, education, and technology development

Open to and serving the University of Maryland, industry, government labs, and external academic and nonprofit organizations

Nanotechnology starts and flourishes with making things at the nanoscale—from fabricating prototype materials and devices for R&D, to piloting the means to manufacture key nano components, microsystems, and products made from them. The FabLab provides the needed equipment and skilled personnel to support academic, corporate and government partners, as well as University of Maryland researchers.

The FabLab is part of the Maryland NanoCenter, a partnership of the A. James Clark School of Engineering and the College of Computer, Mathematical and Natural Sciences at the University of Maryland.

The FabLab supports the Maryland NanoCenter's mission of providing cutting-edge nanotechnologies and services for engineering and science researchers in academia, industry and government; developing future professionals who have hands-on experience in nanotechnology; and promoting a vibrant nanotech economy in the state of Maryland through interactions with established and emerging companies.



*Potassium-ion batteries enhanced by coated microspheres*

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UNIVERSITY OF  
MARYLAND

# RESEARCH

ULTRASMALL SEMICONDUCTOR DEVICES

MOLECULAR ELECTRONICS

THIN FILM TRANSISTORS

DISPLAYS

ENERGY STORAGE

SOLAR CELLS

SENSORS

MEMS DEVICES

CHEM-BIO SENSORS

CELL-BASED MICROSYSTEMS

QUANTUM DOTS

NANO-ROBOTICS

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# CAPABILITIES

FULL SERVICE MICRO- AND NANOFABRICATION

OPEN TO INTERNAL AND EXTERNAL USERS

## FEATURED TOOLS

Atomic layer deposition

Ebeam lithography (<20 nm) and ICP etching

Deep reactive ion etching

XeF2 etching

E-beam & sputter deposition

Advanced plasma etching

Wire Bonding

Carbon nanowire and graphene growth

## CHARACTERIZATION TOOLS

Environmental SEM with EDS

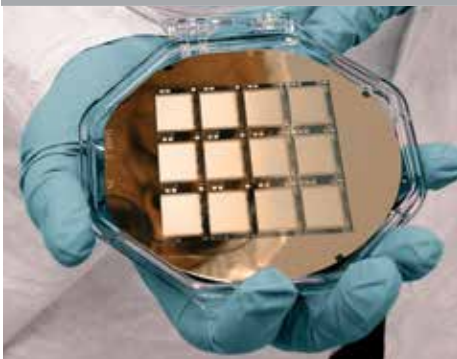
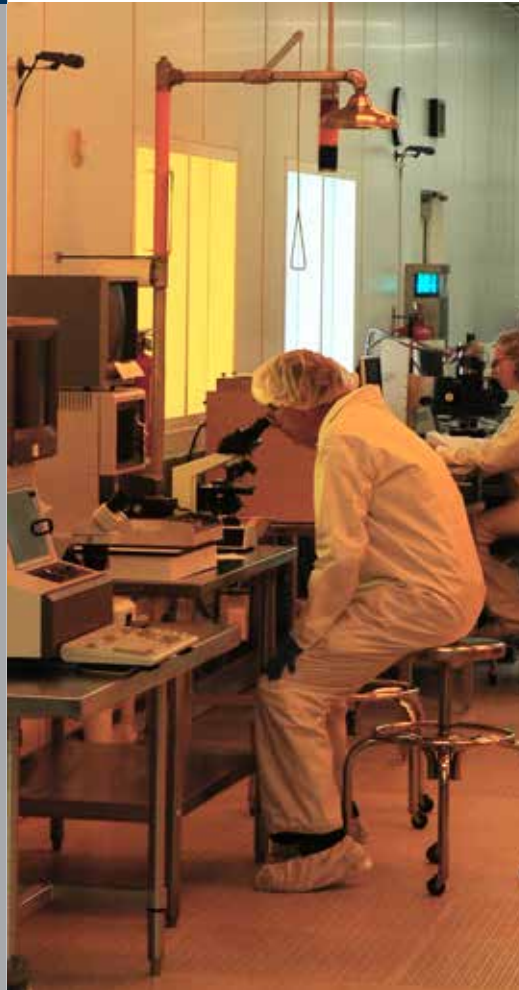
Electrical properties: Four point, Hall effect

Optical characterization: Raman, ellipsometry & FTIR

Stress measurement

BET Porosimetry

## FOUR EXPERIENCED STAFF



THE FABLAB IS PART OF THE MARYLAND NANCENTER, A PARTNERSHIP OF:



A. JAMES CLARK  
SCHOOL OF ENGINEERING

SUPPORTED IN PART BY:



COLLEGE OF  
COMPUTER, MATHEMATICAL,  
& NATURAL SCIENCES

