- What is Electronic Devices & Materials (EDM) Depth?
- Where will I work?
- Courses and Professors

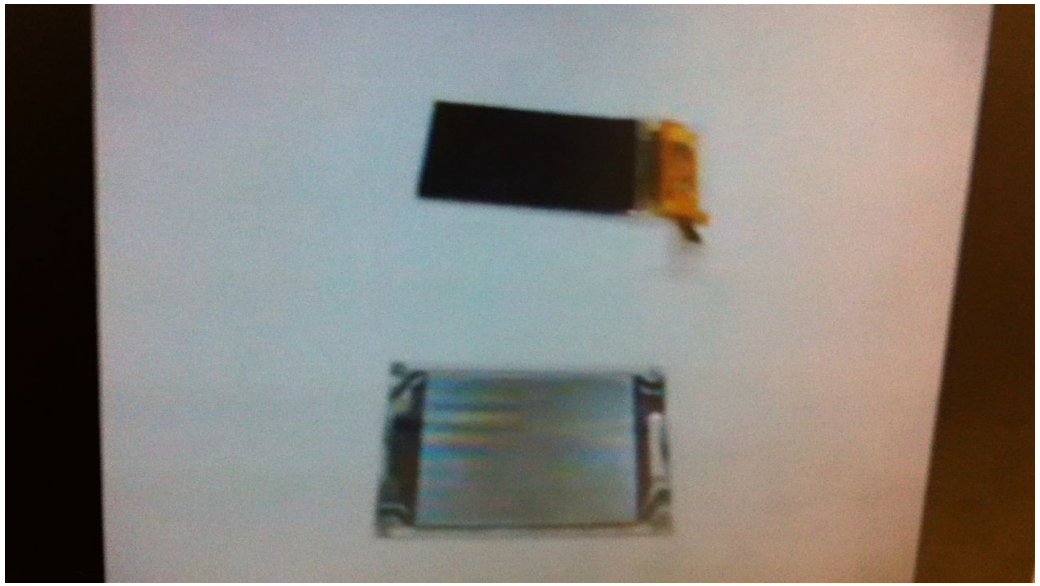
Electronic Devices & Materials (EDM) Depth

Materials and devices are fundamental building block of all electronics

How to use materials and design devices that achieve desired functions

-make better computer-human interfaces

(ex: displays/sensors, bio-interfaces)



Samsung

Electronic Devices & Materials (EDM) Depth

Materials and devices are fundamental building block of all electronics

How to use materials and design devices that achieve desired functions

-make better computer-human interfaces

(ex: displays/sensors, bio-interfaces)

-energy harvesting, energy-efficient devices

(ex: solar, power storage; lighting needs)

if switch to LED, 40% energy savings, eliminate 30+ GWatt power plants (reduce 185 million tons of CO_2)

Electronic Devices & Materials (EDM) Depth

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How to use materials and design devices that achieve desired functions

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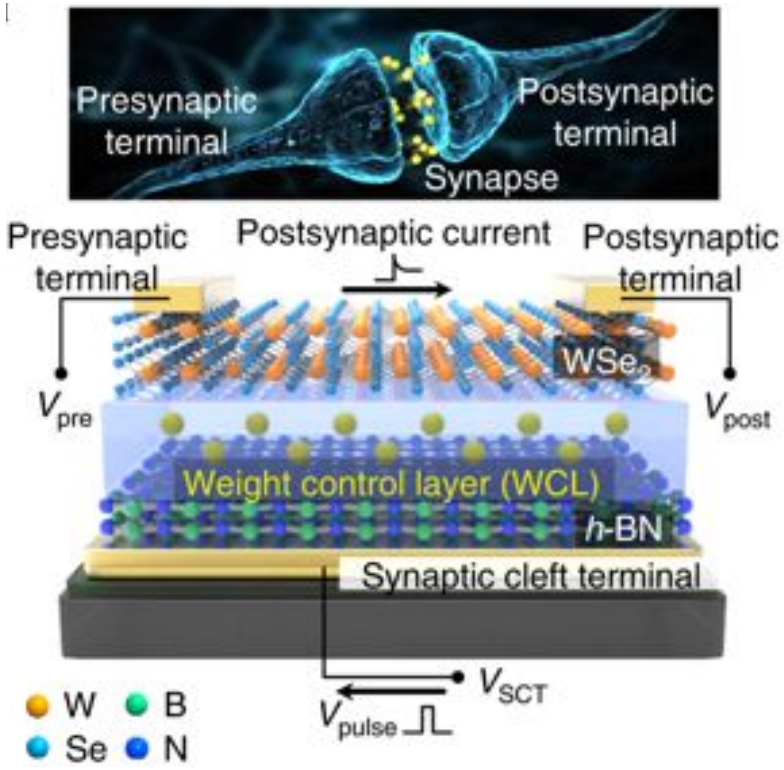
(ex: displays/sensors, bio-interfaces)

-energy harvesting, energy-efficient devices

(ex: solar, power storage; lighting needs)

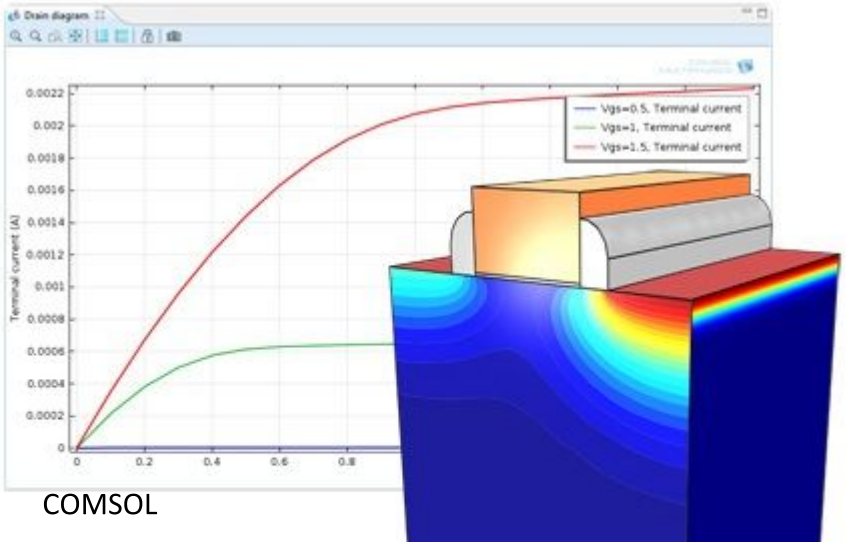
-new computation/recording devices

(ex: neuromorphic computing; high-density memory elements for the vast amount of data we generate)



What do we learn in the EDM depth courses?

- Semiconductor physics
- Energy-matter interactions in atomic/quantum systems
- Operating principles of devices such as diodes, transistors, etc.
- Processing methods to make the devices



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Examples of companies/government labs where our students got internships/jobs :

Courses and Professors

Upper Division (68 units) Breadth: ECE 100, 101, 102, 103, 107, 109
Depth: ECE 135A-B, 136L, 183
Technical Electives: four upper-division engineering/math/physics courses
Professional Electives: two upper-division courses
Design: one of ECE 111, 115, 140B, 190, or 191

Professors:
Shadi Dayeh http://iebl.ucsd.edu/
Eric Fullerton http://cmrr.ucsd.edu/research/faculty-profiles/fullerton.html
Yuhwa Lo https://sites.google.com/a/logroup.ucsd.edu/web/home
Duygu Kuzum http://neuroelectronics.ucsd.edu/UCSD_Neuroelectronics_Group/People.html
Tina Tse Nga Ng http://flexible-electronics.ucsd.edu/
Kenji Nomura https://jacobsschool.ucsd.edu/faculty/faculty_bios/findprofile.sfe?fmp_recid=484&print
Yuan Taur http://fleece.ucsd.edu/~taur/
Paul Yu https://jacobsschool.ucsd.edu/faculty/faculty_bios/index.sfe?fmp_recid=79

Emeritus professors:
Peter Asbeck, SS Lau, Charles Tu