Lecture Outline
(Minor reasonable changes may apply without prior notice.)

Flexible Electronics and Systems

Cheng-Yao Lo

Schedule

W2W3W4

Place

TBD

Description

Flexible electronics device and system made by printing technologies gained various attentions from the professional fields of physics, chemistry, material, and electrical engineering, which generated a novel research field of flexible printronics.

This lecture will start from the conventional solid-state electronics, which covers the physics, process, function, and reliability for the first half; then enter the flexible printing technologies from materials to system designs with selected topics on optical, sensing, storage, transportation, and medical applications.

Students will gain combinational knowledge of solid-state and polymer electronics device and system as well as their respective processes. Practical simulations will be conducted to let students obtain real feelings of the system designs.

Prerequisite

Students are expected to have a bachelor's degree in physics-, chemistry-, mechanics- or electrical-related engineering fields. Professional background of solid-state physics or industrial experience is a plus.

Evaluation

Attendance: 10%

Homework/Exam: 60%

Presentation and report: 30%

Reference

1. Flexible Electronics, ISBN: 978-0387743622
2. Polymer Electronics, ISBN: 978-1847354228
3. Printed Organic and Molecular Electronics, ISBN: 978-1402077074

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Outline (change without prior notice may apply)

Week 1~3: Introduction and market

Week 4~5: Flexible glass

Week 6~8: Engineered films

Week 9: Mid-term examination

Week10~11: Barrier and transparent conducting oxide

Week 12~14: Mechanics and stability

Week 15~16: TFT on polymer

Week 17: Case study

Week 18: Final examination