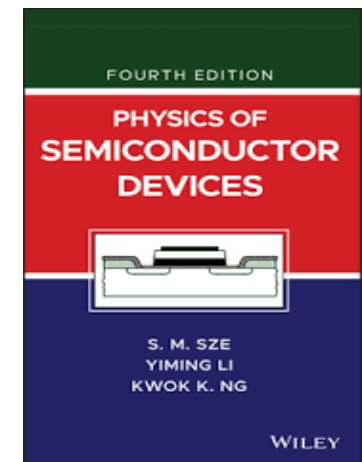
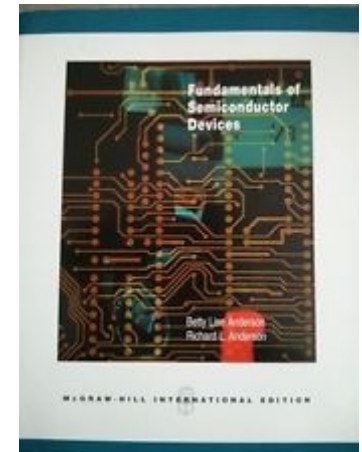


Introduction to Solid-State Electronic Devices 固態電子元件導論

EE 335000 固態電子元件導論

Introduction to Solid-State Electronic Devices

- Professor: 林崇榮 Chrong Jung Lin
- TA: TBD
- Course Handouts (download from EECClass)
- Reference Books
 1. Fundamentals of Semiconductor Devices (Ref.)
by Betty L. Anderson & Richard L. Anderson
 2. Physics of Semiconductor Devices (Ref.)
by Simon M. Sze, Yiming Li, Kwok K. N

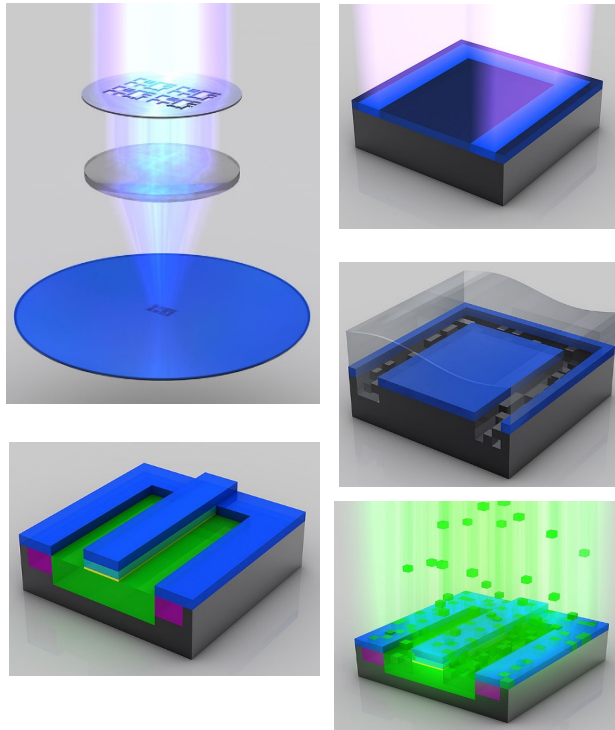


Course Description

The course of “Introduction to Solid-State Electronic Devices” (固態電子元件導論) is a foundational course designed for undergraduate students who wish to acquire a comprehensive understanding of semiconductor devices, including their fundamental characteristics, mechanisms, and underlying physics. In this course, students will learn important topics such as semiconductor band theory, carrier transportation and conduction in semiconductors, semiconductor junctions and diodes, MOS capacitors, MOSFETs, bipolar transistors, as well as VLSI memory technologies. Additionally, this course incorporates contemporary knowledge on semiconductor devices, ensuring students stay up to date with the latest advancements in the semiconductor field.

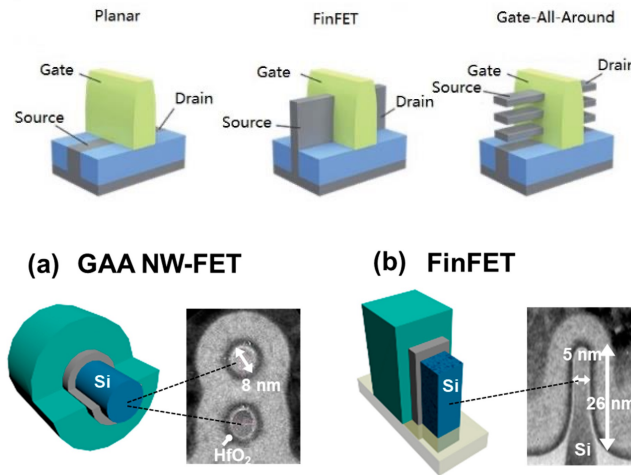
Expertise in Semiconductor

Manufacturing



Process and Module
(Lithography/Etch/Thin Film/Diffusion)
(製程與微電子工程)

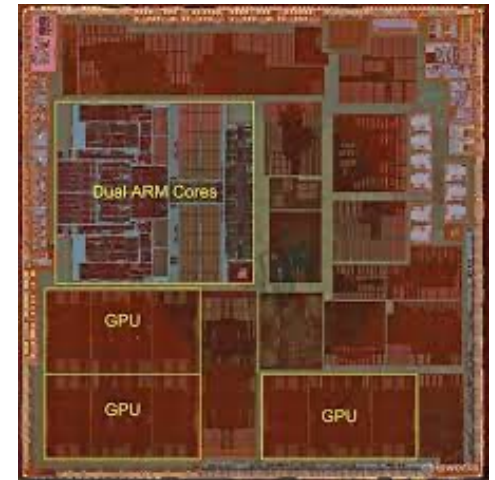
Technology



Solid-State Electronic Devices
(固態電子元件)

VLSI Device
(積體電路元件)

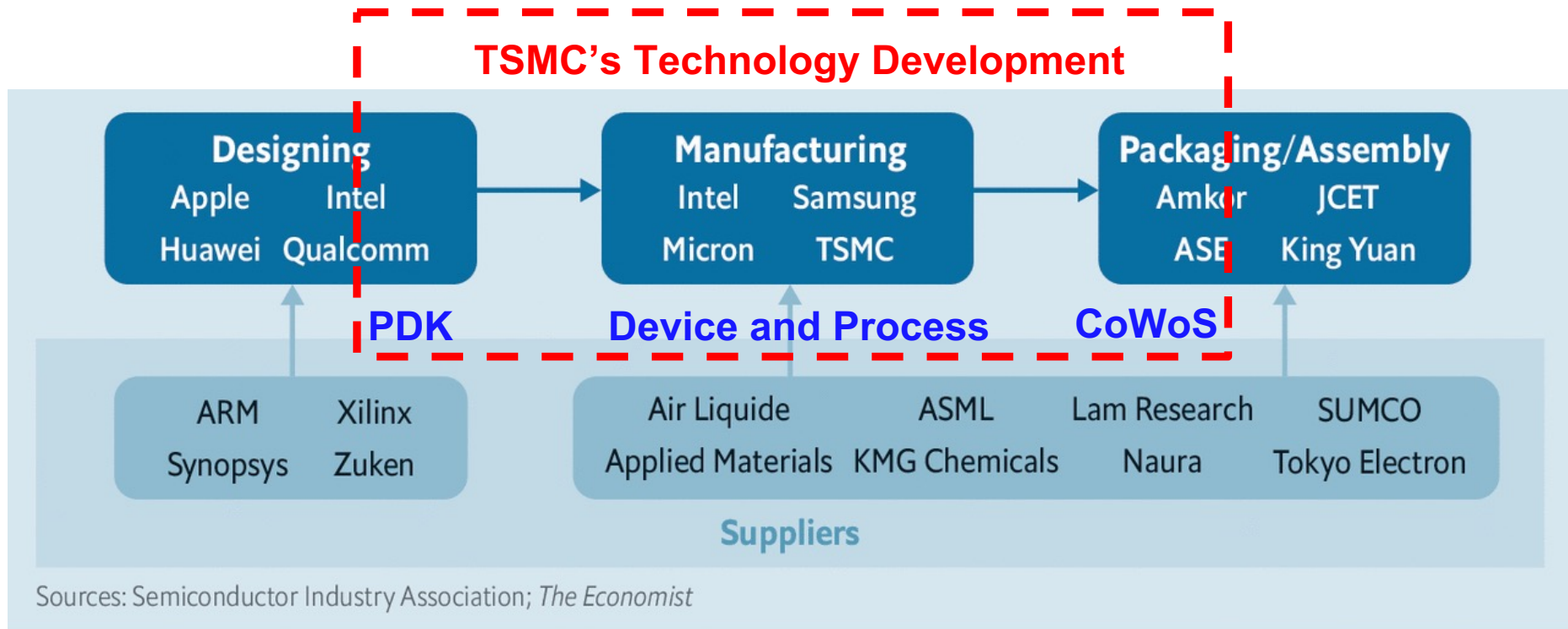
Chip Design



VLSI Circuit / Memory Design
(積體電路設計)

Digital/Analog Designs
(數位類比電路設計)

Semiconductor Industry Chain



The Economist

Syllabus for 16 Weeks

- Chap 1: Semiconductor Energy States and Bands (2W)
- Chap 2: Carrier Concentration and Conduction (2.5W)
- Chap 3: Semiconductor Junction and Diodes (2.5W)
- Midterm Exam (1W)
- Chap 4: MOS Capacitor and Planar MOSFET (2.5W)
- Chap 5: SOI and 3D MOSFET Technologies (2.5W)
- Chap 6: Bipolar Junction Transistor BJT (2W)
- Final Exam (1W)

Grading Policy

- **40% for Quiz or Homework**
- **30% for Midterm Exam**
- **30% for Final Exam**