

固態電子元件

Solid State Electronic Devices

Fall 2008

NTHU EE
EE3350 固態電子元件導論
Introduction to Solid-State Electronic Devices



EE3350 固態電子元件導論

Introduction to Solid-State Electronic Devices

■ Class Time & Venue

- W3W4F4
- 資電館 (CSEE) R206

■ Textbook

- [Fundamentals of Semiconductor Devices](#)
by Betty L. Anderson & Richard L. Anderson (Mc GRAW.HILL)

■ Reference book

- [Solid State Electronic Devices](#)
by Ben G. Streetman & Sanjay K. Banerjee (Pearson)

■ ftp for handout/material download

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Information

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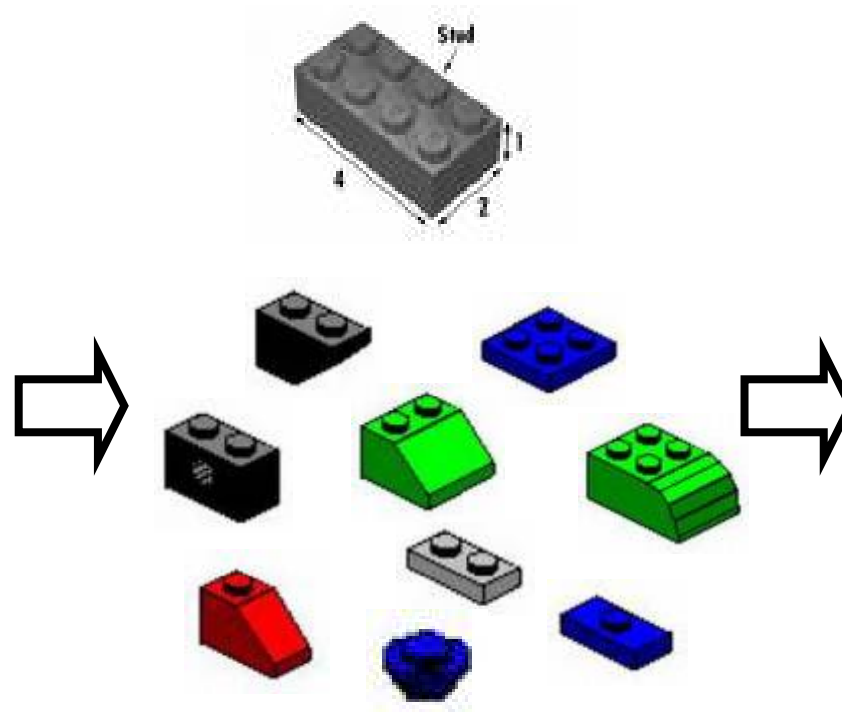
- TA: 謝佩珊, 邱筱芸
 - [Microelectronics Lab.](#) : 教育館 (Edu. Build.) R111
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 - 佩珊 16:20~17:20, Thursday ; 筱芸 13:10~14:10, Thursday
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What's Device ?

Manufacturing



Components

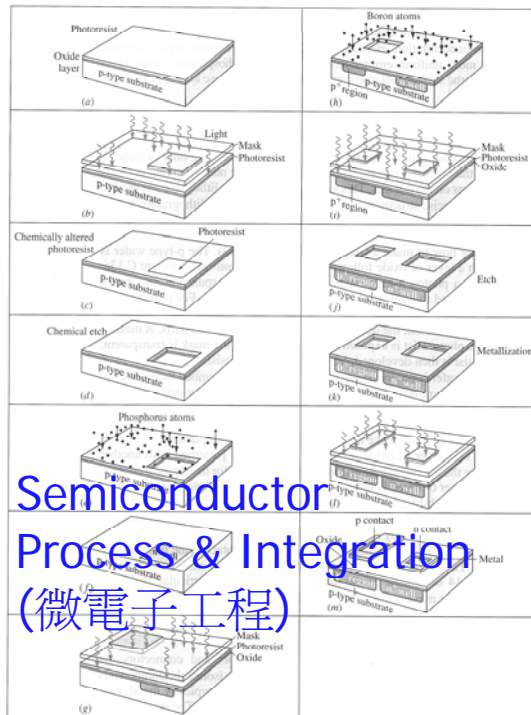


Composition



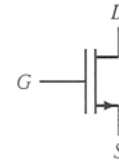
What's Device ?

Manufacturing



Semiconductor
Process & Integration
(微電子工程)

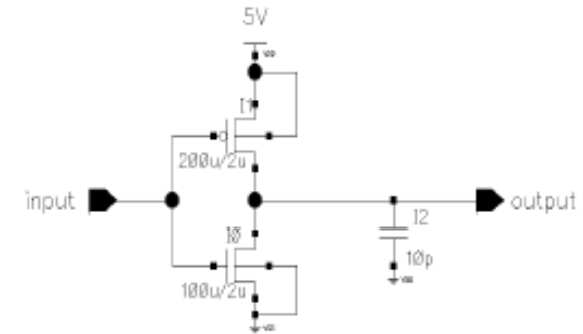
Components



Semiconductor
Devices
(固態電子元件)

VLSI Device
(積體電路元件)

Composition



Microelectronics
(電子學)

VLSI Circuit Design
(積體電路設計)



Syllabuses

- Semiconductor Material & Energy States
- Semiconductor Diodes
- Field Effect Transistors
- Bipolar Junction Transistors
- Optoelectronic Devices (Optional)

Contains

	Topic	Syllabus
A	Semiconductor Material	Energy State and Model
B		Energy Bands & Levels
C		Current Flow Model
D	Diode	Homogeneous Junction
E		Small Signal & Transient Effect
F		Nonstep & Hetero Junctions
G	MOSFET	MOS Capacitor
H		Charge Control Model
I		MOSFET Characteristics 1
J		MOSFET Characteristics 2
K	Bipolar	Heterojunction Bipolar (HBT)
L		SCR & BJT
M	Optoelectronic Device	Photodetector & LED
N		CMOS Image Sensor



Grading Policy

- GRADING:
 - Test (n) 30%
 - Midterm (1) 30%
 - Final (1) 40%