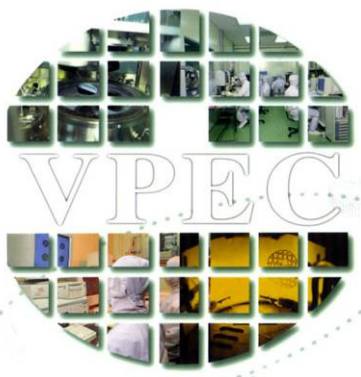




公司簡介

MOCVD 創造世界級之競爭力

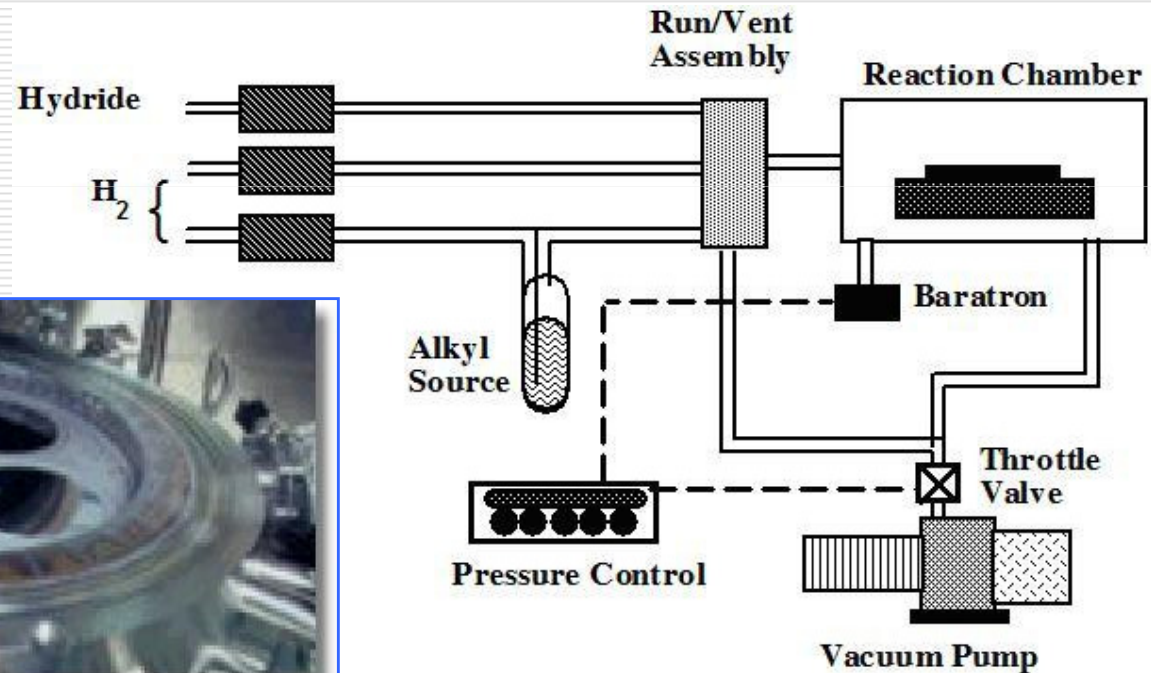




核心技術

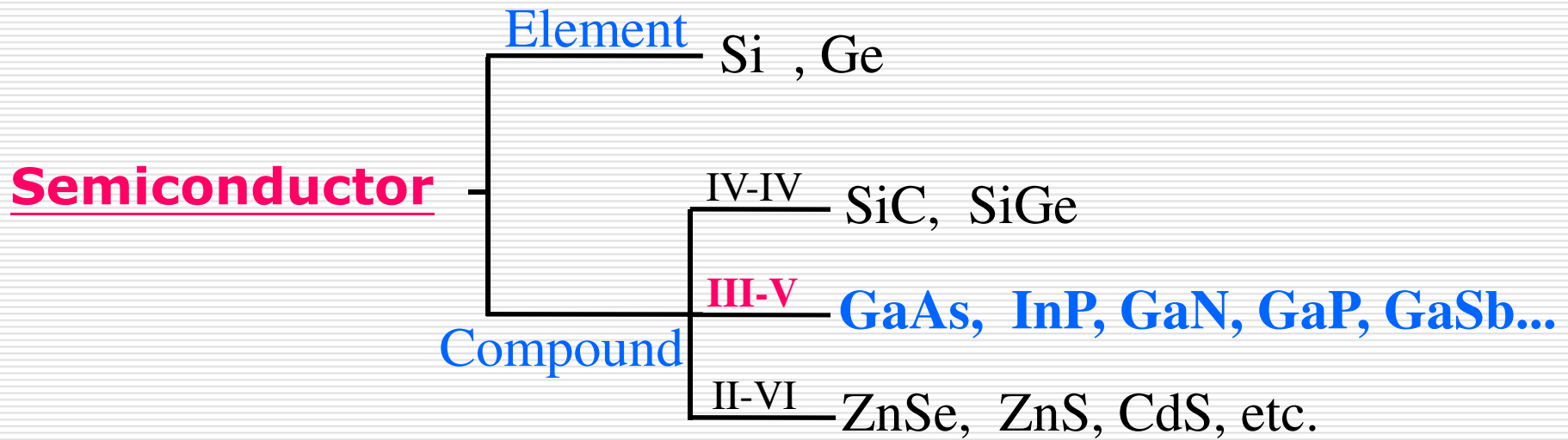
MOCVD (有機金屬氣相沉積法)

- Metal Organic Chemical Vapor Deposition





半導體分類 (依使用材料)



Period	Column II	III	IV	V	VI
2	Be 鈹 Beryllium	B 硼 Boron	C 碳 Carbon	N 氮 Nitrogen	O 氧 Oxygen
3	Mg 鎂 Magnesium	Al 鋁 Aluminum	Si 矽 Silicon	P 磷 Phosphorus	S 硫 Sulfur
4	Zn 鋅 Zinc	Ga 鎵 Gallium	Ge 鍺 Germanium	As 砷 Arsenic	Se 硒 Selenium
5	Cd 鎘 Cadmium	In 銦 Indium	Sn 錫 Tin	Sb 銻 Antimony	Te 碲 Tellurium
6	Hg 汞 Mercury	Tl 鉍 Thallium	Pb 鉛 Lead		

二元化合物 Binary : GaAs, InP, GaP, GaN, etc.

三元化合物 Ternary : InGaAs, InGaP, AlGaAs, etc.

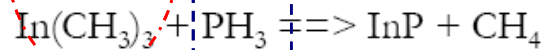
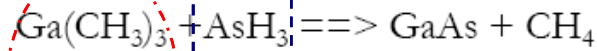
四元化合物 Quaternary : AlGaInP, InGaAsP, etc.

五元化合物 Pentanary : AlGaInAsN, etc.



磊晶過程中之化學反應

化學反應式：



主要原物料：

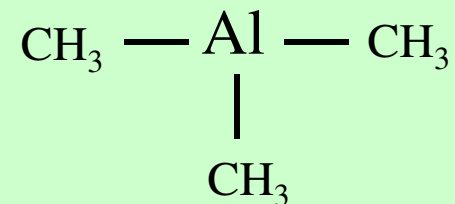
MO Source + **Hydride** + Carrier Gas : **H2**

- TEAl : Tri-ethyl-Aluminum (C_2H_5)₃Al
- TMGa : Tri-Methyl-Gallium (CH_3)₃ Ga
- TMIn : Tri-Methyl-Indium (CH_3)₃In
- DETe : Di-ethyl-Tellurium (C_2H_5)₂Te
- DEZn : Di-ethyl-Zinc (C_2H_5)₂Zn
- CP₂Mg : Bis (cyclo-penta-dienyl)-Magnesium 環戊二烯鎂

- AsH₃ : Arsine
- PH₃ : Phosphine
- SiH₄ : Silane
- Si₂H₆ : Disilane
- H₂Se : Hydrogen Selenide
- CBr₄ : Carbon Tetrabromide

TMAI Tri - Methyl - Aluminum (CH_3)₃Al

三 甲 基 鋁





化合物半導體材料特性

1. High Electron Mobility 高電子移動速率 (5.7x higher than CMOS)
2. High Frequency Response 高頻率響應
3. Wide Band Width 寬幅之頻寬
4. High Linearity 高線性度
5. High Power 高功率
6. Alternative Choice of Material 材料選擇多元性
7. 抗輻射

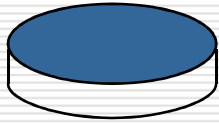
適用於無線通訊、光通訊、雷射



產業供應鏈

Sumitomo, Freiberg, AXT

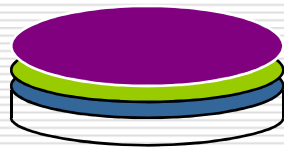
4~6 "GaAs Substrate



GaAs Epi- Wafer
磊晶片

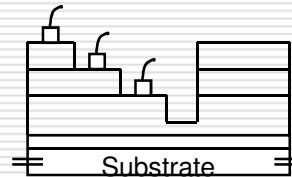
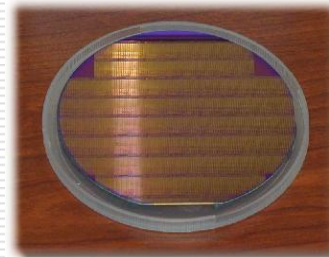


MOCVD Reactor



IDM : Qorvo, Avago,
Skyworks

Microelectronics
IC Process

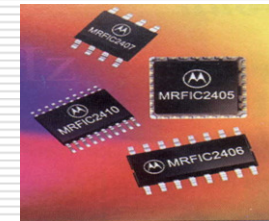


Foundry :

WIN, AWSC,
GCS



Wireless
Communication



IC Package & Testing



2016~2020上半年損益情形

	2020 H1	%	2019	%	2018	%	2017	%	2016	%
Revenue	1,243,380	100.00%	2,530,909	100.00%	2,062,120	100.00%	2,137,109	100.00%	2,182,825	100.00%
Gross margin	528,690	42.52%	1,034,272	40.87%	774,359	37.55%	743,467	34.79%	809,059	37.06%
Operating Profit	325,345	26.17%	648,983	25.64%	463,906	22.50%	515,093	24.10%	588,072	26.94%
Financial Income	-1,737	-0.14%	-20,380	-0.81%	25,273	1.23%	-35,375	-1.66%	-29,431	-1.35%
Tax	-49,662	-3.99%	-114,278	-4.52%	-92,009	-4.46%	-85,366	-3.99%	-91,534	-4.19%
Net income	273,946	22.03%	514,325	20.32%	397,170	19.26%	394,352	18.45%	467,107	21.40%
EPS	1.48		2.79		2.16		2.15		2.12	