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# Company Profile

**World-class leading edge with MOCVD**

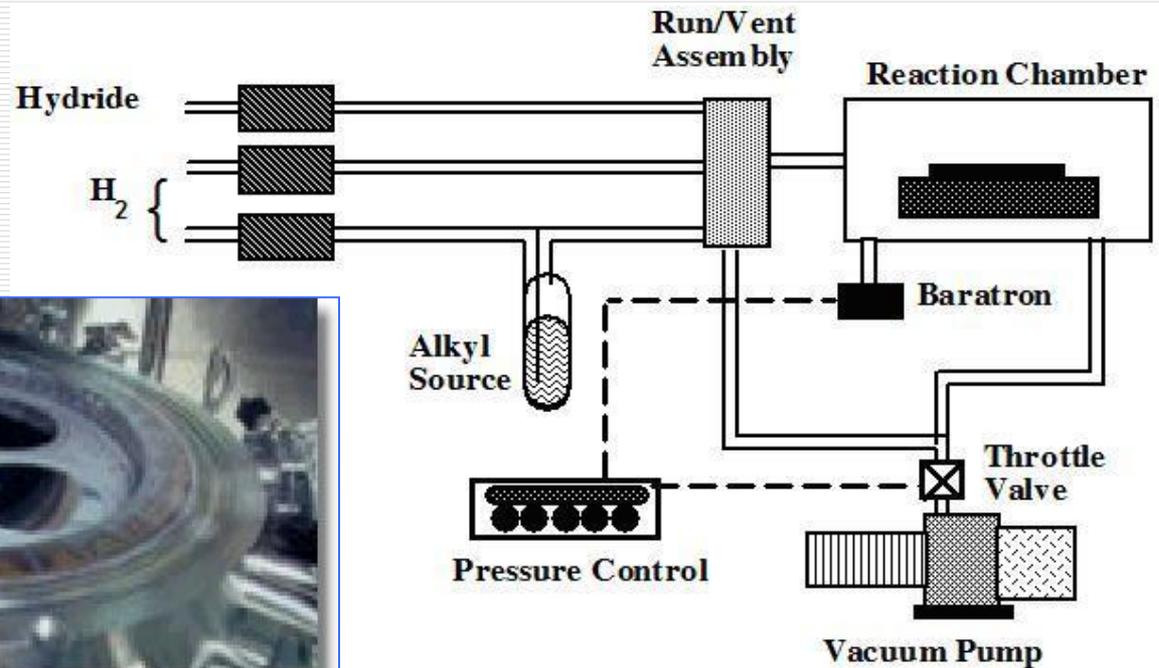




# Core Technology

## MOCVD (有機金屬氣相沉積法)

- Metal Organic Chemical Vapor Deposition





# Core Technology

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Production  
Reactor

MOCVD Metal Organic Chemical Vapor Deposition

Way to  
Produce

Through the organic metal chemical vapor deposition method, the semiconductor film is grown on the substrate, and the epitaxial layer is accurately controlled through the real-time monitoring of the machine to complete the production of epitaxial wafers for different products such as GaAs、InP and GaN.

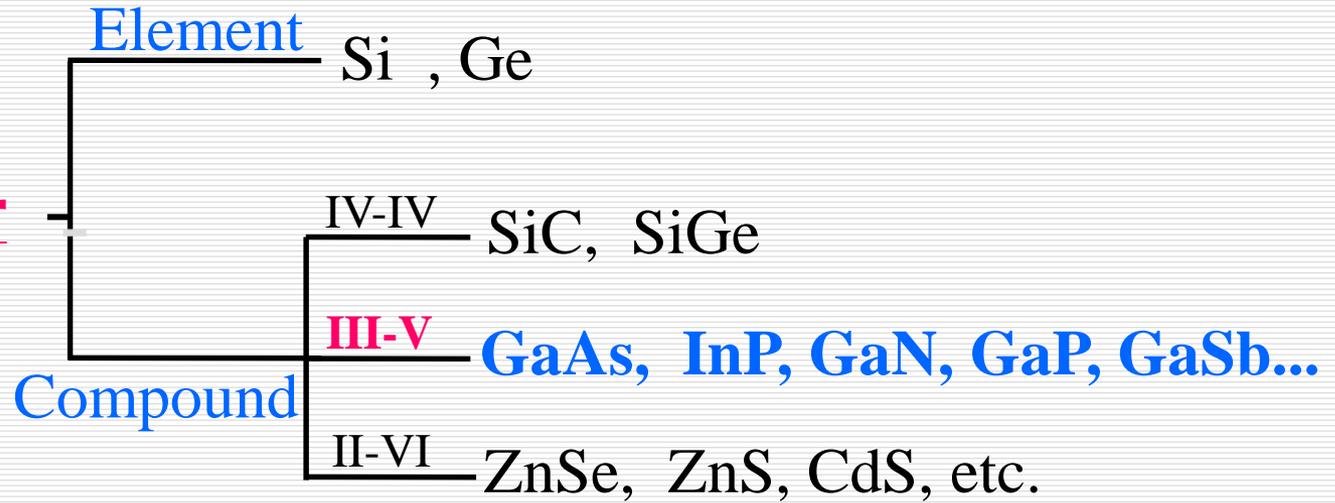
Production  
Principle

The epitaxial layer is heated by MOCVD in the cavity of the substrate, and an atomic layer is stacked layer by layer to form an epitaxial layer.



# Semiconductor (by Material)

## Semiconductor



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 鉈 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.

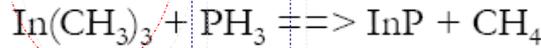
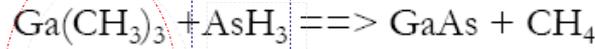
四元化合物 Quaternary : AlGaInP, InGaAsP, etc.

五元化合物 Pentanary : AlGaInAsN, etc.



# Chemical Reaction During Epitaxy

化學反應式：



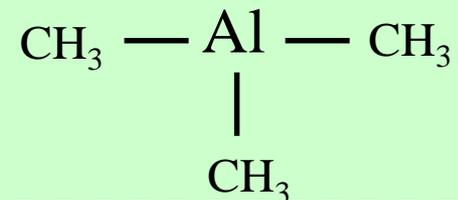
主要原物料：

**MO Source** + **Hydride** + Carrier Gas : **H<sub>2</sub>**

- TEAl : Tri-ethyl-Aluminum ( C<sub>2</sub>H<sub>5</sub> )<sub>3</sub>Al
- TMGa : Tri-Methyl-Gallium ( CH<sub>3</sub> )<sub>3</sub> Ga
- TMIn : Tri-Methyl-Indium ( CH<sub>3</sub> )<sub>3</sub>In
- DETe : Di-ethyl-Tellurium ( C<sub>2</sub>H<sub>5</sub> )<sub>2</sub>Te
- DEZn : Di-ethyl-Zinc ( C<sub>2</sub>H<sub>5</sub> )<sub>2</sub>Zn
- CP<sub>2</sub>Mg : Bis (cyclo-penta-dienyl ) Magnesium 環戊二烯鎂

- AsH<sub>3</sub> : Arsine
- PH<sub>3</sub> : Phosphine
- SiH<sub>4</sub> : Silane
- Si<sub>2</sub>H<sub>6</sub> : Disilane
- H<sub>2</sub>Se : Hydrogen Selenide
- CBr<sub>4</sub> : Carbon Tetrabromide

TMAI    Tri - Methyl - Aluminum ( CH<sub>3</sub> )<sub>3</sub>Al  
 三 甲 基                      鋁





# Advantages of Compound Semiconductor

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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

適用於微電子產品—HBT、pHEMT、BiHEMT、GaN on XX  
光電子產品—PIN (PD、APD)、VCSEL、LD、SC



# GaAs in Wireless Communication Supply Chain

Sumitomo, Freiberg, AXT

2~6 "GaAs Substrate

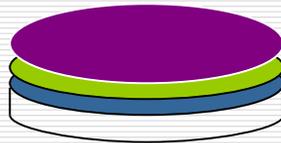


GaAs Epi- Wafer  
磊晶片



MOCVD Reactor

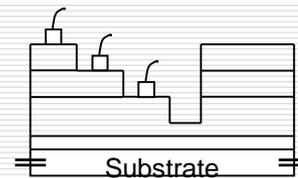
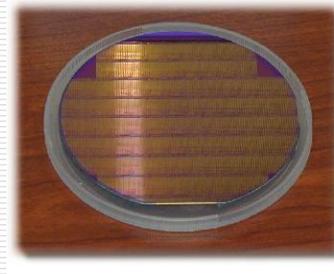
VPEC is a Pure  
Epi Provider



IDM : Qorvo, Skyworks

Fabless : Avago,  
Qualcomm, Richwave,

Microelectronics  
IC Process



Foundry :  
WIN, AWSC



Wireless  
Communication



IC Package & Testing

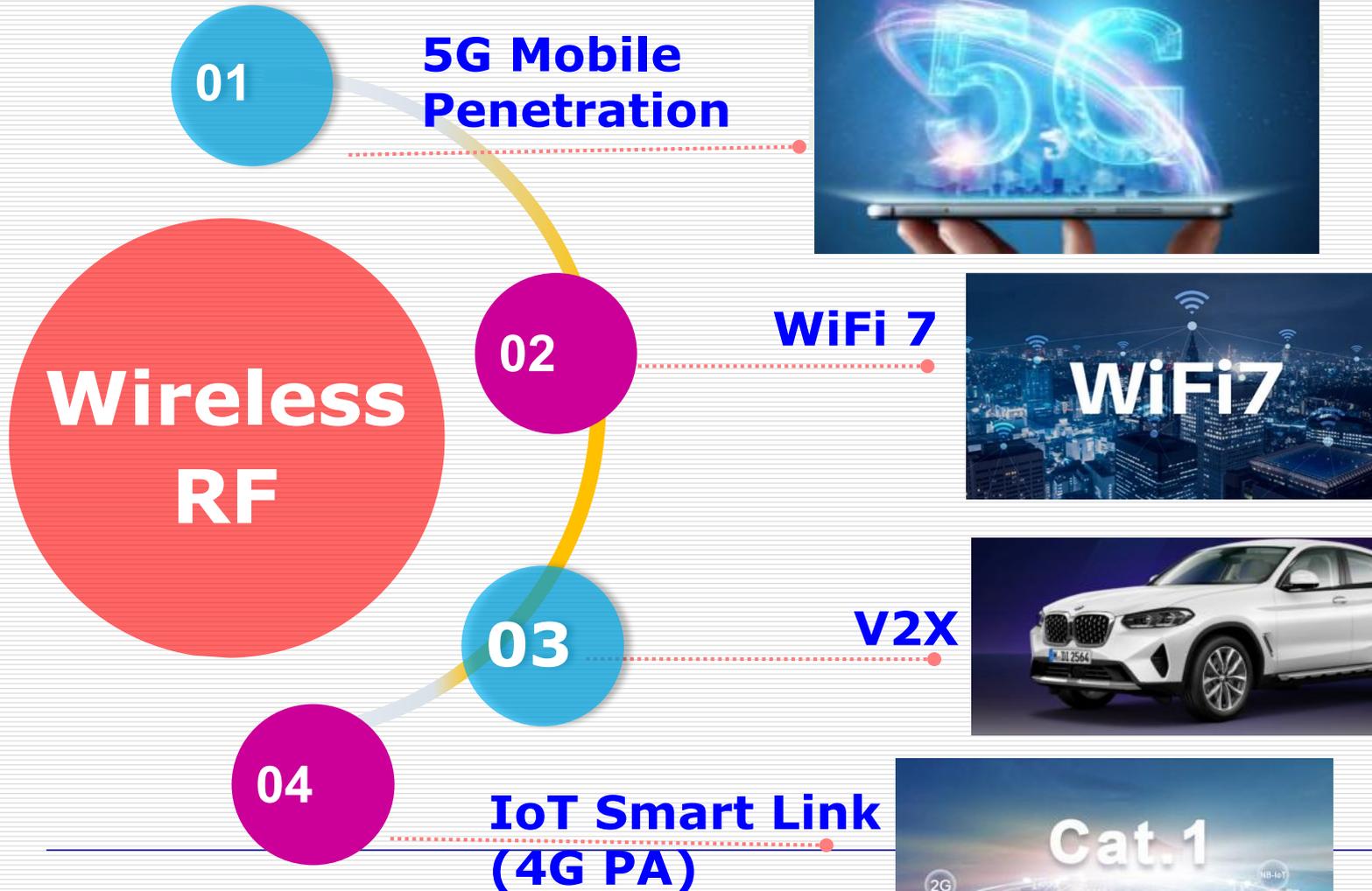


# 2022-2025Q1 Financial Result

	2025 Q1	%	2024	%	2023	%	2022	%
Revenue	793,663	100%	3,241,217	100%	2,694,104	100%	2,603,629	100%
Gross margin	316,671	40%	1,278,964	39%	1,108,914	41%	1,089,007	42%
Operating Profit	178,983	23%	721,214	22%	542,069	20%	579,950	22%
Non-operating income & expense	17,638	2%	96,460	3%	-347	0%	87,533	3%
Tax	-39,334	-5%	-146,619	-5%	-91,490	-3%	-122,755	-5%
Net income	157,287	20%	671,055	21%	450,232	17%	544,728	21%
EPS	0.85		3.63		2.43		2.95	



# 2025 Outlook





# 2025 Outlook

Opto electronics

01

Data Center  
High Speed  
Connectivity



PD for 800G  
VCSEL for 400G

02

3D-sensing



VCSEL / PD

03

AR/VR



VCSEL

04

Future Driving  
Engines

**Machine Vision**

**Ai Machine Vision**

機器視覺影像辨識技術  
Ai應用最重要技術之一

MarketsandMarkets分析報告，全球機器視覺市場2025年將成長到130億美元，你準備好成為最大商機裡的重要核心角色了嗎?

Open CV

**LEO Solar Cell**



AI glass  
Silicon Photonics

P-sensor 、 3D Sensing & ToF



**Car LiDAR (LD/PD)**

