

# INSIGHT SKYTECH

# 天虹科技



## 免責聲明

本資料可能包含對於未來展望的表述。該類表述是基於對現況的預期，但同時受限於已知或未知風險或不確定性的影響。因此實際結果將可能明顯不同於表述內容。

除法令要求外，公司並無義務因應新資訊的產生或未來事件的發生主動更新對未來展望的表述。

## 經營團隊背景

- 黃見駱: 天虹科技董事長兼總經理
- 羅偉瑞: 集團創辦人; 天虹科技執行副總經理
- 易錦良: 集團執行長 (前美商應用材料公司全球副總裁)



黃見駱  
29 Years experience  
in Semi Equipment



羅偉瑞  
29 Years experience  
in Semi Equipment



易錦良  
29 Years experience  
in Semi Equipment

# 生產據點



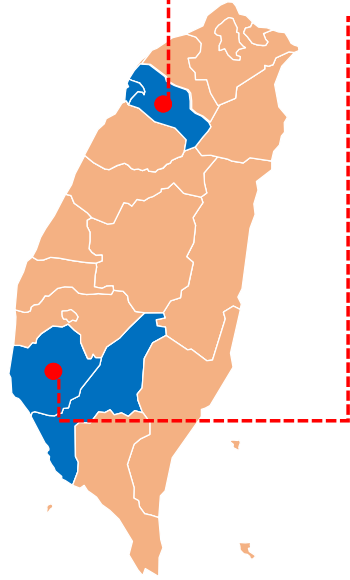
鑫天虹廈門廠



廈門

新竹

台南



天虹湖口廠



# 天虹科技能力及產品發展

1	2	2	2
9	0	0	0
9	0	1	2
5	2	7	4

能力累積

天虹科技團隊於半導體 設備/製程/應用 之經驗累積

客戶端之信用累積

天虹科技成立並致力於半導體零組件 設計/銷售/服務

天虹科技持續正向盈餘

自有品牌設備設計及銷售

持續累積超過2000不同項目 零組件設計及服務

PVD 設備

Bonder/Debonder 設備

ALD 設備

Etch 設備

PECVD

.....其他產品

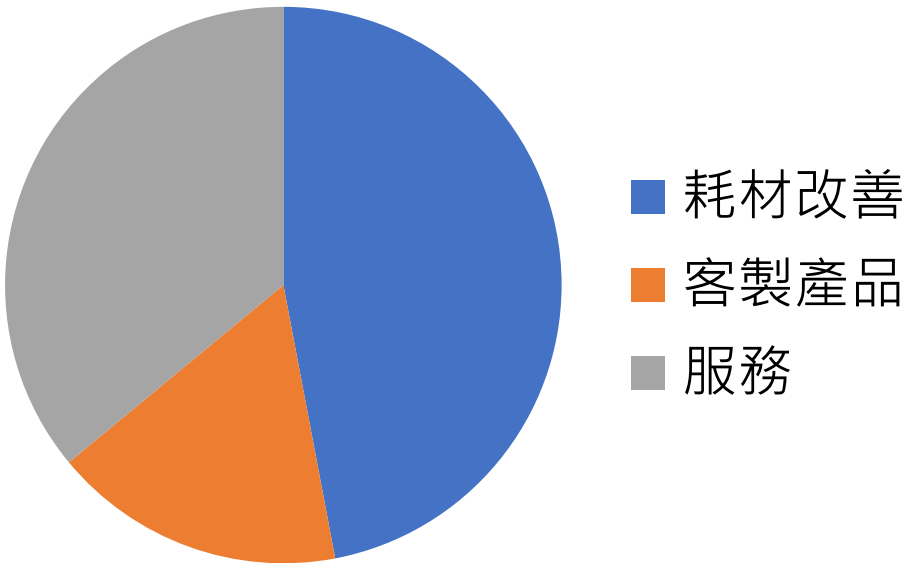
持續開發半導新應用之設備及零組件

半導體設備  
關鍵供應商

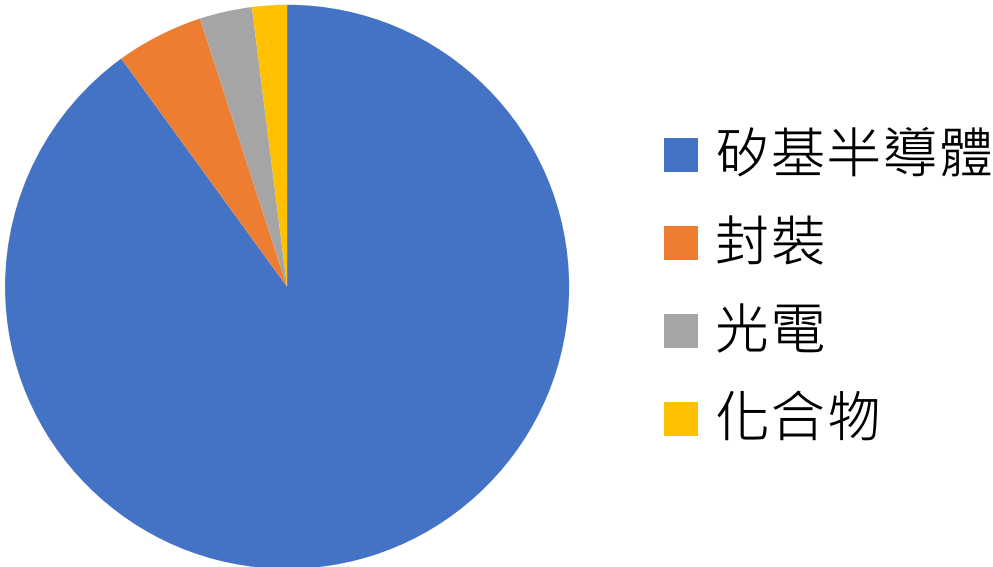
產品  
發展及成長

# 天虹科技零組件產品及產業分布

## 零組件產品概分類



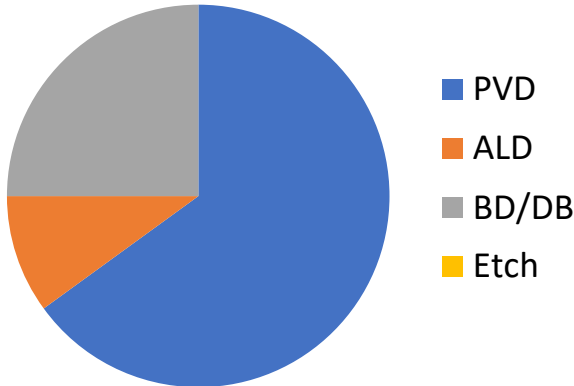
## 零組件產業分布



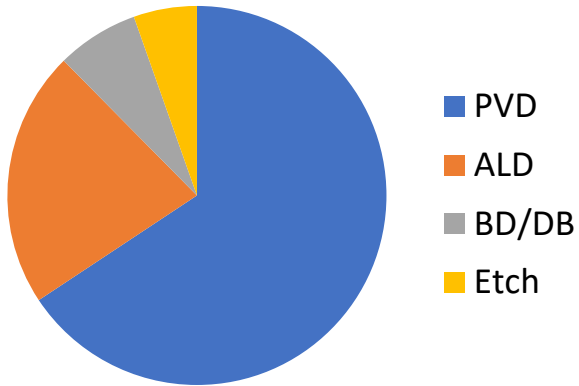
# 天虹科技設備產品及產業分布

## 設備產品分類

2023

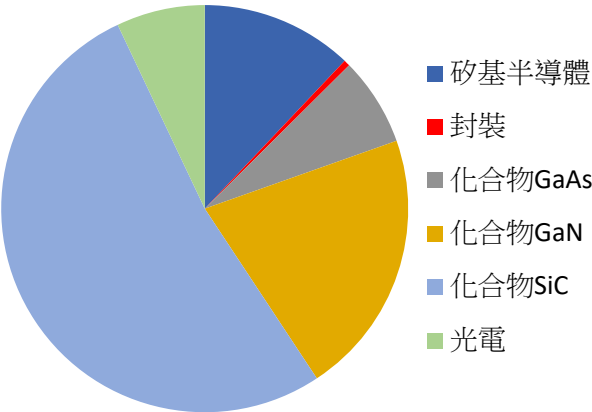


2024

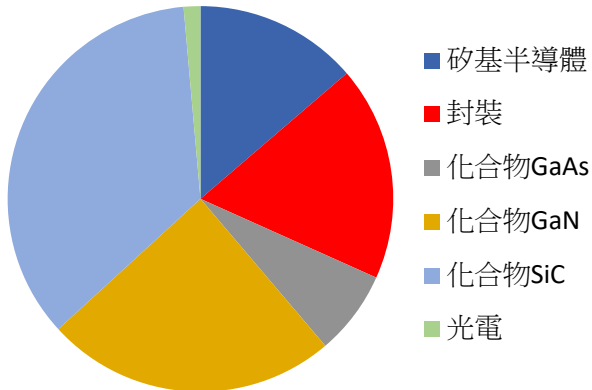


## 設備產業分布

2023



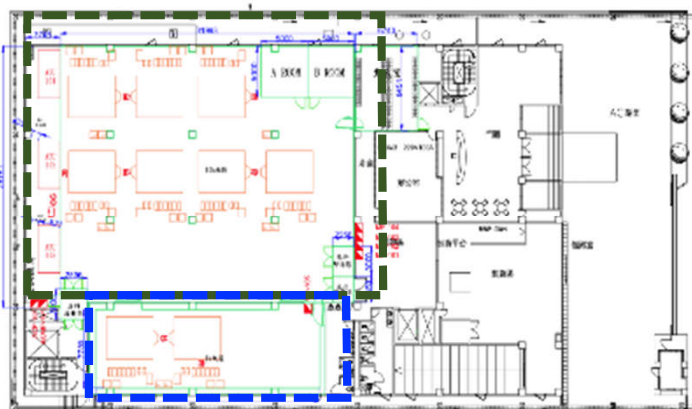
2024



# 天虹科技 - 湖口廠 & 無塵室



萬級組裝區



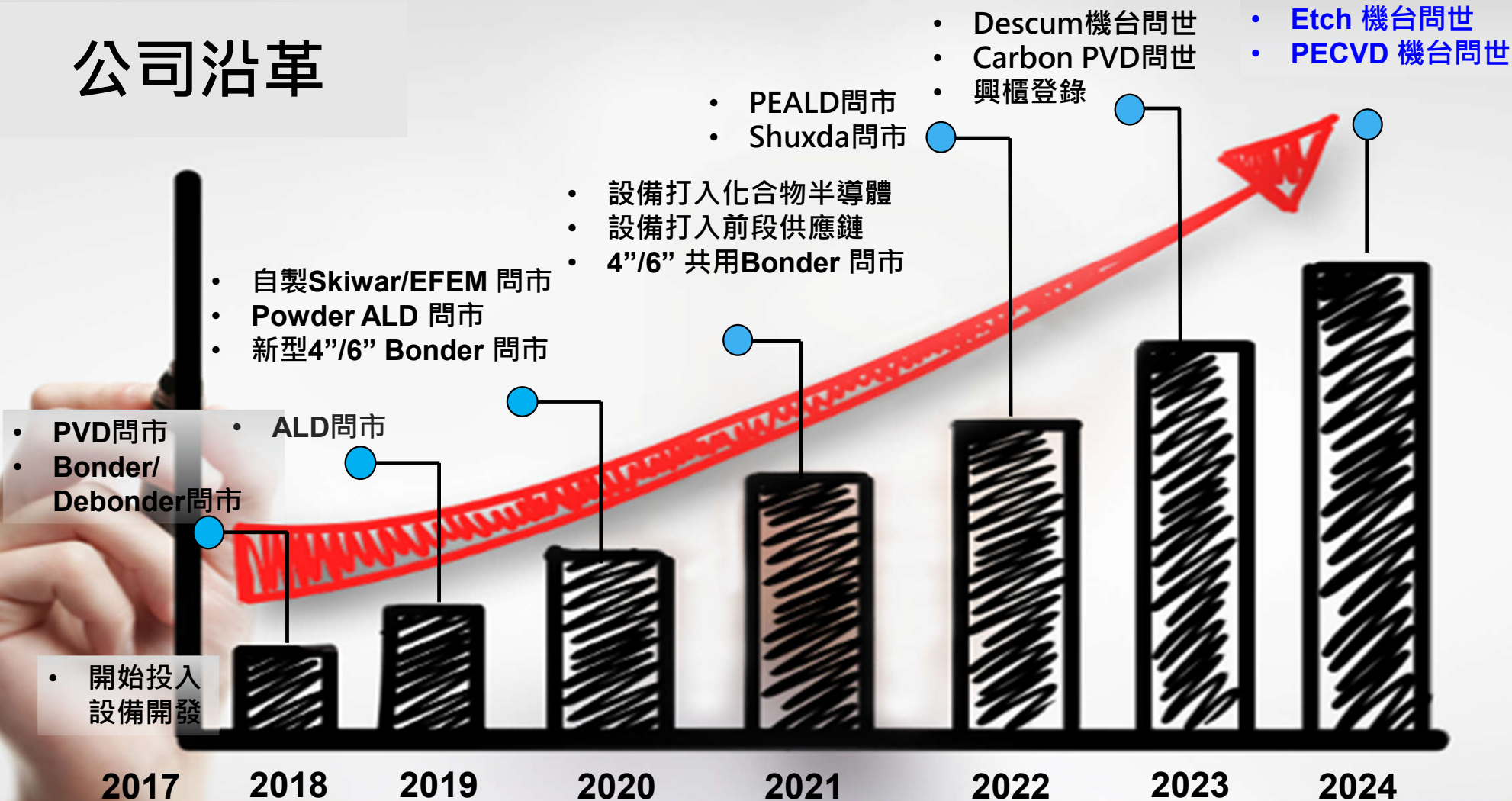
千級實驗區





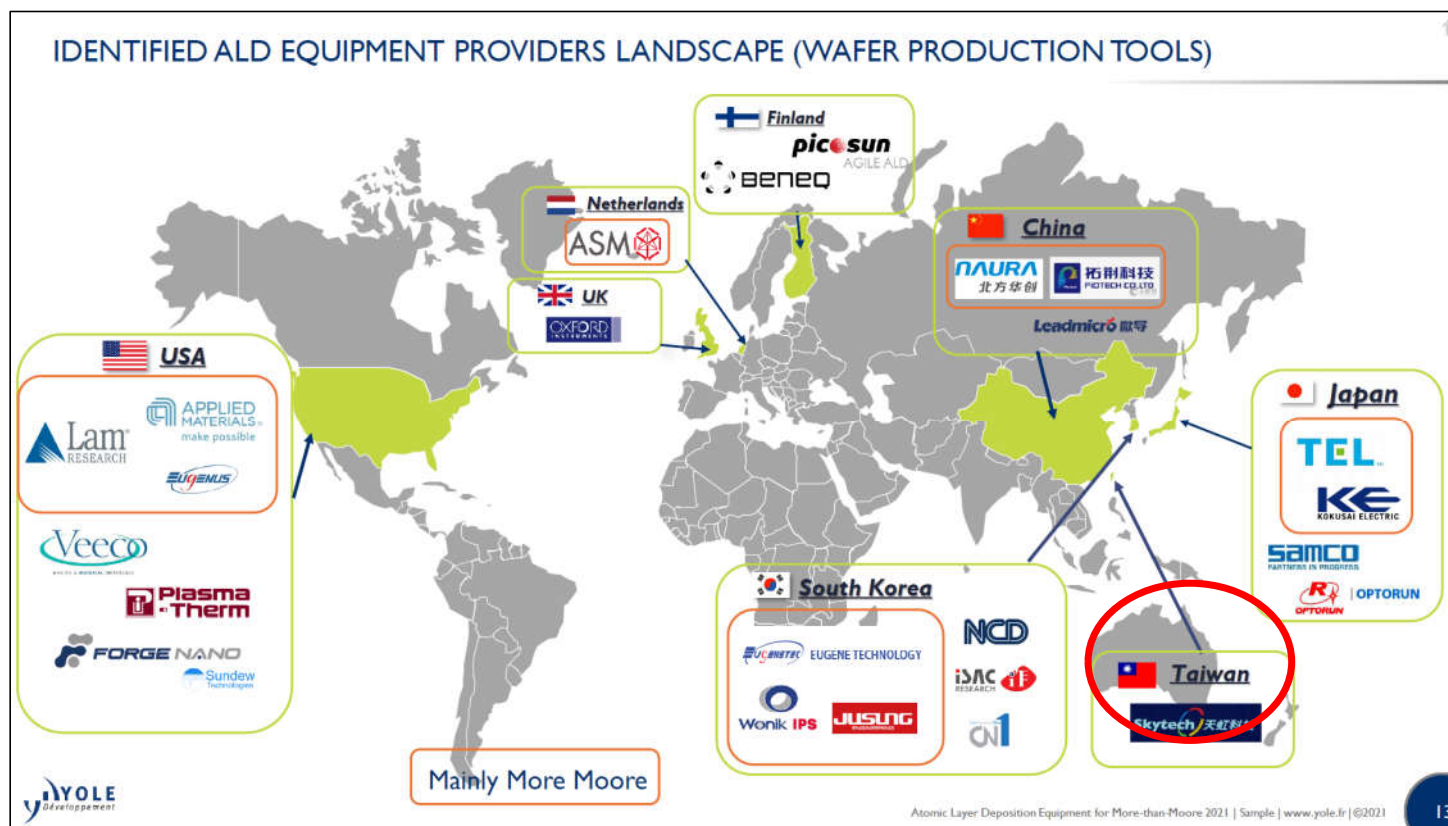
# 天虹科技簡介-概覽(2/2)

## 公司沿革



## 天虹科技躋身全球ALD設備供應商

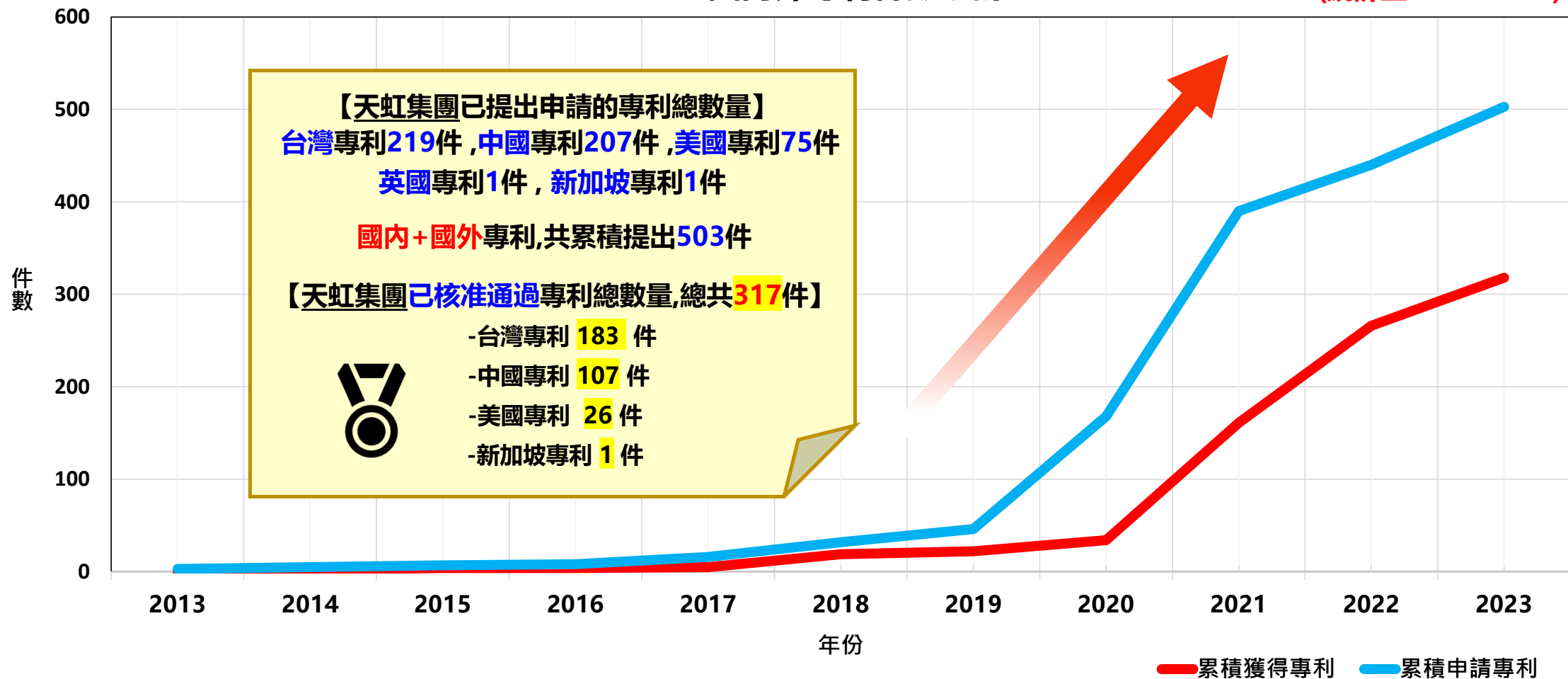
法國知名半導體及電子元件研究機構Yole Développement針對ALD的報告中，已將天虹列為世界主流的ALD設備供應商。



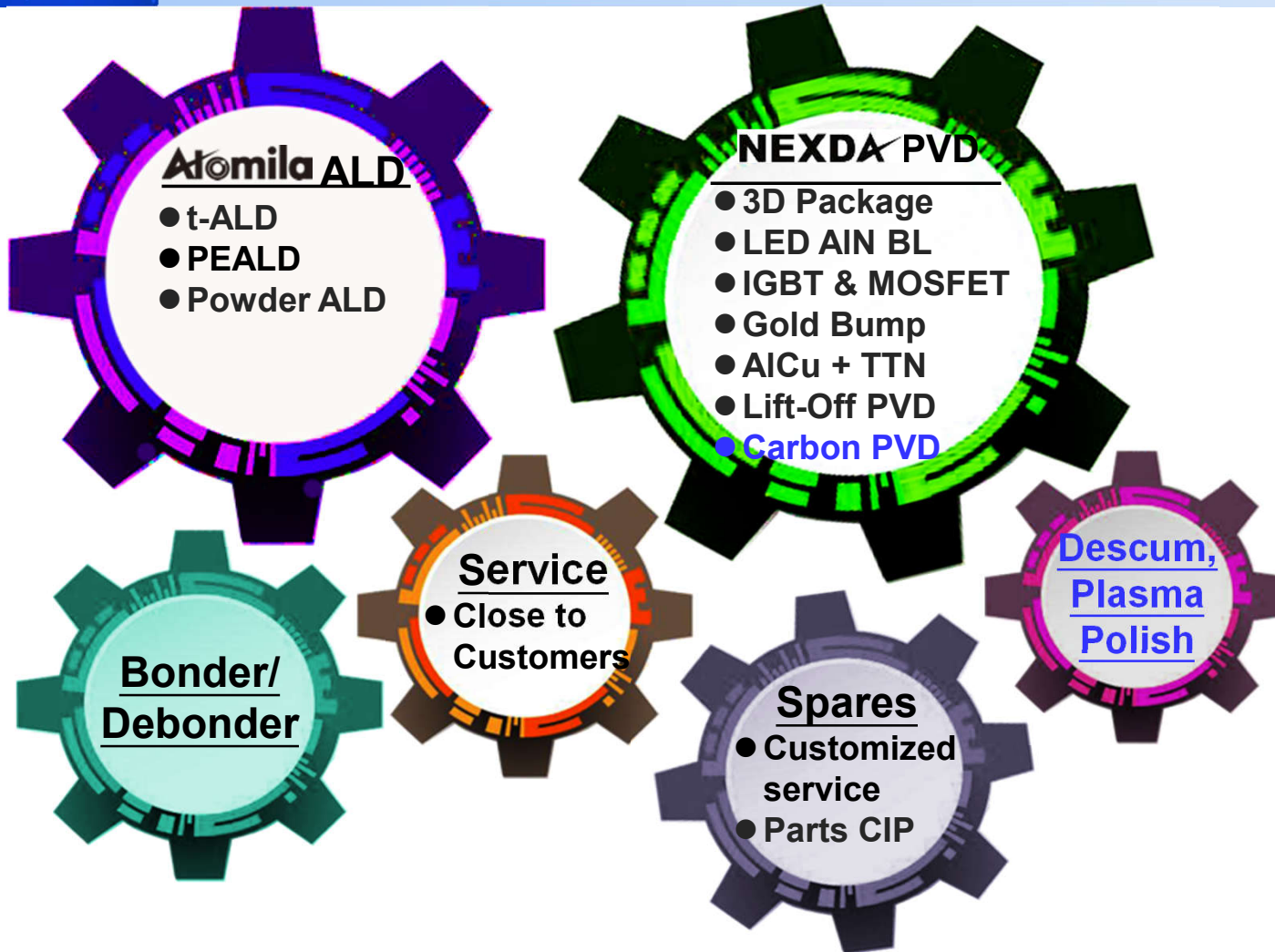
# 國內外專利件數統計

## 國內外專利件數統計

(統計至2023.12.31)



# 天虹科技-主要產品



# 天虹製程設備家族

Lift-Off  
PVD

LED AlN  
Buffer  
Layer

IGBT &  
MOSFET

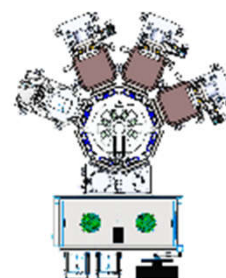
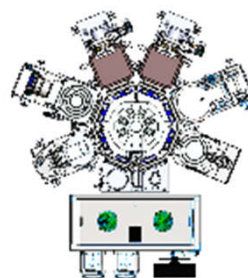
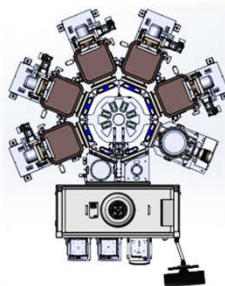
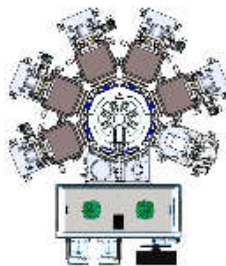
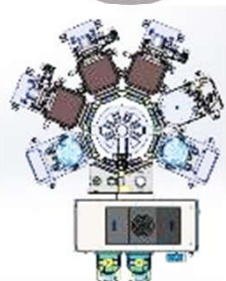
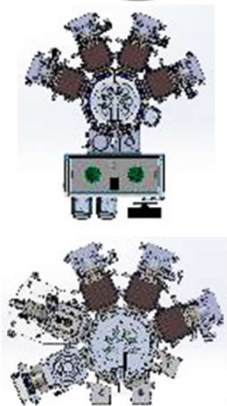
FEOL  
(AlCu +  
TTN)

Advanced  
Package

Gold Bump  
/ Bumping

t-ALD +  
Pre-treatment

PEALD  
NBT/C<sup>2</sup>PT



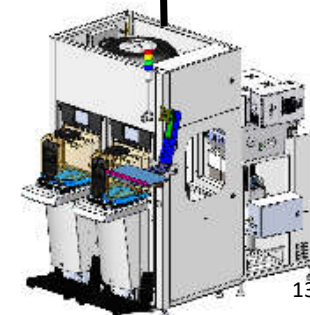
Bonder

De-  
Bonder

Skiwar

Powder  
t-ALD Al<sub>2</sub>O<sub>3</sub>

Descum/  
Plasma Polish



# Core Competence & RD Direction

## High Vacuum Plasma & Wafer Thinning Solution Provider



**High Vacuum & Plasma**



**Descum & Plasma Polish**

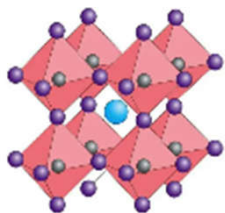


**Powder ALD (for QD)**

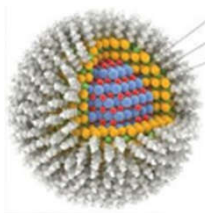
**PVD**



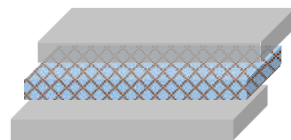
**ALD**



**Perovskite QD**



**CdSe QD**



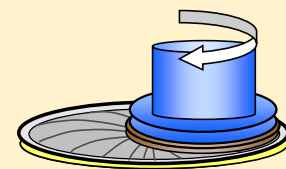
**QD film/ QD Glass**

Silicon Semiconductor  
Frontend/Adv. Package/IGBT BM  
(PVD, ALD, Bonder, Descum)

Compound Semiconductor  
GaAs/InP/SiC/GaN  
(PVD, ALD, Bonder, De-bonder,  
Plasma Polish)

LED/Mini LED/ Micro LED  
(PVD, ALD, Powder ALD) & (QD solution)

CPO (Co-Package Optics)  
(PVD)



**Wafer Thinning**



**Bonder**



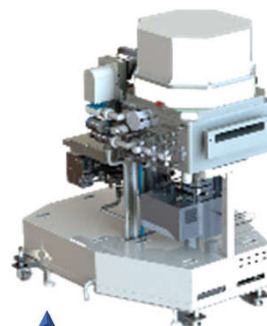
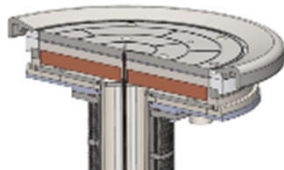
**De-Bonder**

# Roadmap of PVD

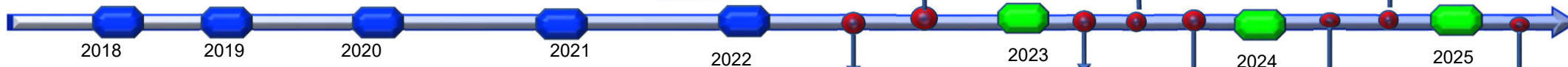
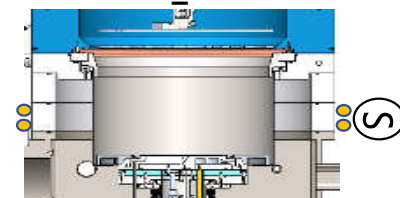
## NEXDA

- ESC: Enhanced Step Coverage
- HSC: High Step Coverage
- B-HSC: Bias High Step Coverage

AlN Heater



NEXDA\_B-HSC



2018

2019

2020

2021

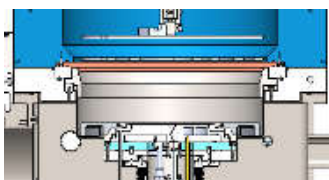
2022

2023

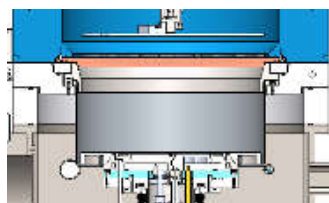
2024

2025

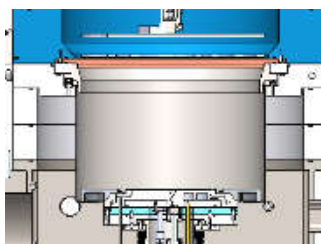
NEXDA\_STD



NEXDA\_ESC



NEXDA\_HSC



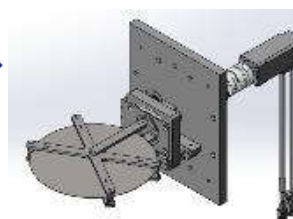
CrSi PVD

Carbon PVD

ITO PVD

高深寬比鍍膜技術

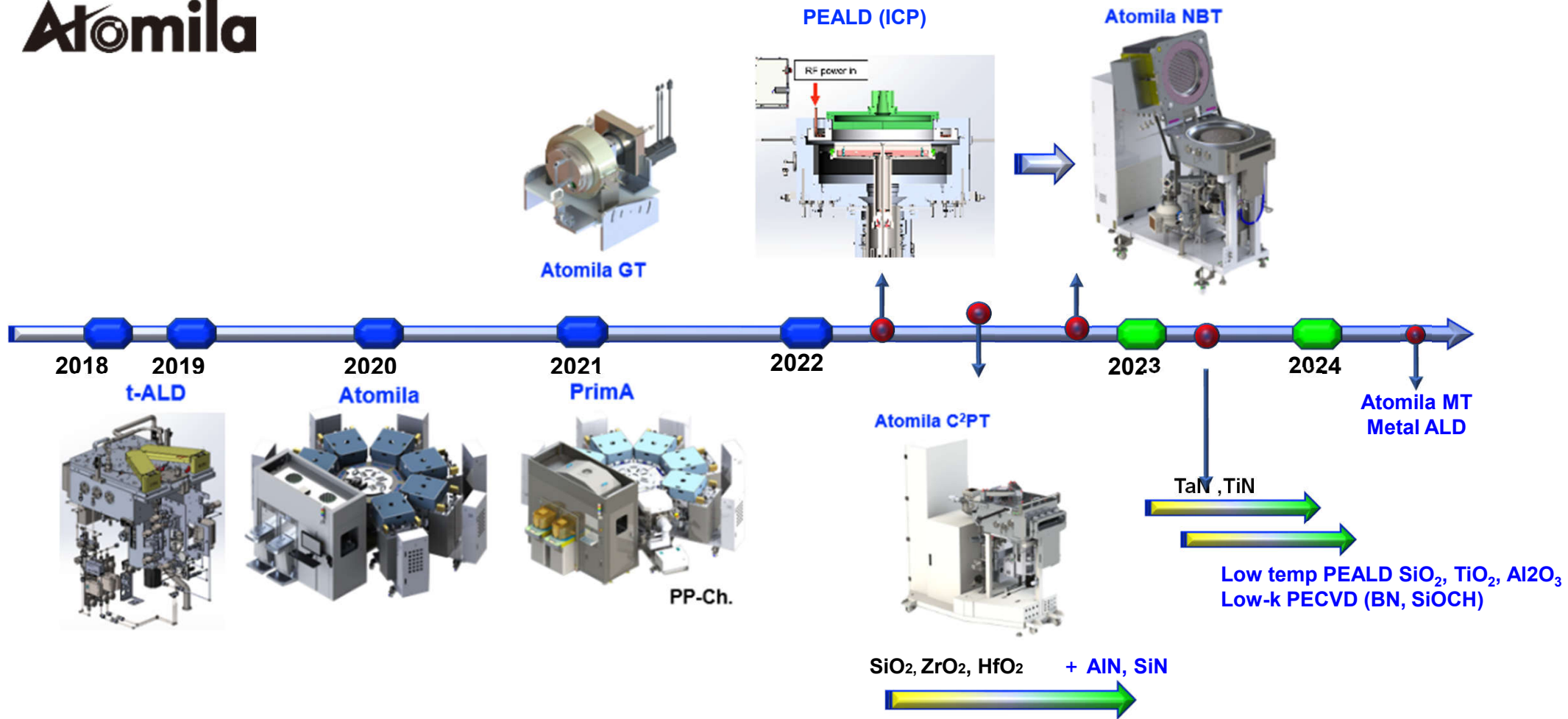
雙面鍍膜技術



CPC 應用

# Roadmap of ALD

**Atomila**



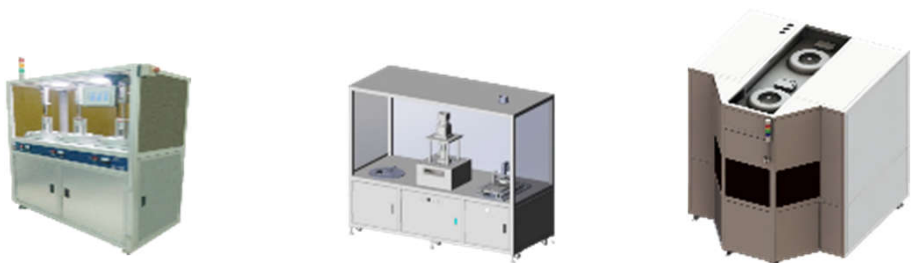


# Roadmap of Bonder & Debonder

**CatapultA**



**Bondela**



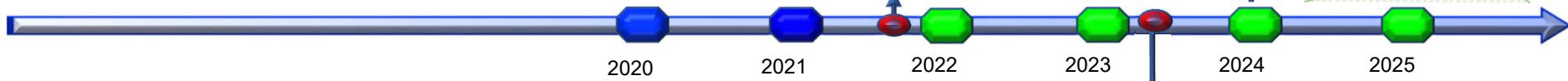
● 研發高精度Bonder (for 3DIC hybrid bond)



● 8"、12" Bonder (For wafer thinning)

● 4"/6" 共用Bonder

● 自動分離減薄wafer和透氣吸盤

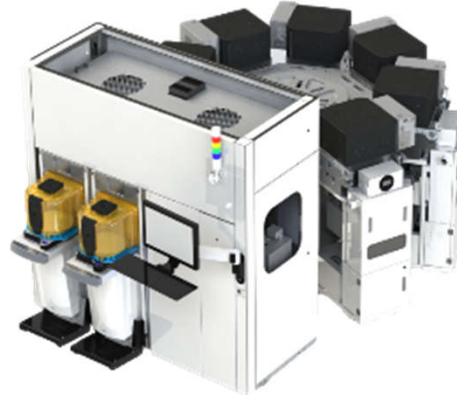


# Roadmap of Descum & Plasma Polish

## Descum

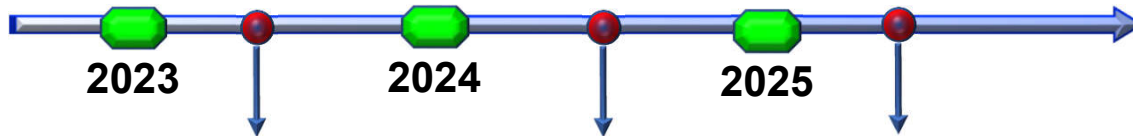


## Plasma Polish & Dry etching



*Integrated with Std. EFEM*

*Integrated with Narrow Body LL*



**Descum & Dry etching for 3DIC related application :**

- PI & PR descum
- LTHC dry etching

**SiC Plasma Polish**

**Dry etching for SiC MOSFET**

- SiC MOSFET backside etching
- SiC trench gate formation

**Atomic layer etching (ALE) for p-GaN HEMT**

- Low damage AlGaN Etching



**Skytech** 天虹科技

**Atomila Bondela Catapulta NEXDA Shuxda**

## 近期合併財務數據

單位：新臺幣千元；每股盈餘為新臺幣元

項目	2020年度	2021年度	2022年度	2023年度
營業收入	998,574	1,655,712	1,815,477	1,992,643
營業毛利	390,197	662,528	845,972	877,142
毛利率	39.08%	40.01%	46.60%	44.02%
營業費用	381,474	471,843	557,629	554,503
稅前淨利	77,090	241,538	366,469	364,581
稅後淨利	61,787	224,620	316,862	306,661
每股盈餘	1.63	4.57	5.66	5.02