



2024.07.19

法說會 Investor Conference

鑫科材料科技股份有限公司

ThinTech Materials Technology Co., Ltd.(TTMC)





議 程

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Welcome speech and team introduction

李昭祥 董事長

Chairman C.H. Lee

➤ 24Q1營運

24Q1 operations

林慶鈞 行政副總

Adm. VP C.C. Lin

中鋼精材整併

Mergement of CSPM

➤ 公司新樣貌與營運展望

New look of the company and operation outlook

潘永村 總經理

President Y.T. Pan

➤ 提問與回答

Questions and Answer

經營團隊

Management team



投資安全聲明

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經營團隊 Management team



董事長
Chairman



李昭祥
C.H. Lee

39年產業經驗
39 years of industry
experience

- 中龍鋼鐵股份有限公司
總經理
President of DSC
- 中國鋼鐵股份有限公司
生產部門助理副總經理
Assistant Vice
President, Production
division, CSC

總經理&鑫昌董事長
President &
Chairman of TCMC



潘永村
Y.T. Pan

39年產業經驗
39 years of industry
experience

- 中鋼技術部門專案副處長
Project Deputy General
Manager, Technology
Division of CSC
- 中鋼新材料研發處 鋁及特
殊合金發展組組長
Manager, Aluminium &
Specialty Alloy
Development Section,
New Materials R&D
Department, CSC

生產技術副總
Vice President
of Production
Technology



林景扶
Jeff Lin

30年產業經驗
30 years of industry
experience

- 工業技術研究院研究員
Researcher, Industrial
Technology Research
Institute

行政管理副總
Vice President of
Administration



林慶鈞
C.C. Lin

20年產業經驗
20 years of industry
experience

- 中盈投資開發(股)公司 資深專業經理
Senior professional
manager, Gains
Investment
Corporation

中鋼精材董事長
Chairman of
CSPM



馮復安
F.A. FENG

35年產業經驗
35 years of industry
experience

- 技術部門專案副處長
Project Deputy General
Manager, Technology
Division, CSC
- 中鋼公司 冶金技術處特
殊合金品管組長
Manager, Specialty
Alloy Quality Control,
Metallurgical
Department, CSC



I.營運概況 Operational Overview



-近期重要紀事 Recent important events

- 5月正式取得常州中鋼精密鍛材有限公司之70%股權。
Formerly acquired 70% shares of China Steel Precision Materials Co. in May.
- 成為中國醫藥大學附設醫院新竹分院裝設禾榮公司的台灣首套加速器型硼中子捕獲治療(AB-BNCT)設備的供應鏈夥伴。
Became a supply chain partner for the first accelerator-type boron neutron capture therapy(AB-BNCT) equipment provided by Heron Neutron Medical Corp. at the Hsinchu Branch of the China Medical University Hospital.
- 成為面板級扇外型封裝金屬載板之唯一技轉方認可供應商。
Became the only supplier authorized by the technology transfer side for fan-out panel level packaging metal carriers.
- 第十屆(112年)公司治理評鑑，本公司位列全體上櫃公司第二級距，連續五年位列第二級距，總分達90.97。
In the 10th (2023) Corporate Governance Assessment, the Company was ranked in the second of all OTC companies, and has been ranked in the second tier for five consecutive years, with a total score of 90.97.
- 榮獲2023年度勞動部職業安全衛生署表揚頒獎企業永續報告公開職業健康與安全指標評比-績優企業。
Awarded the Outstanding Enterprise on the Sustainability Report of OTC Companies 2023 OSHA, MOL.

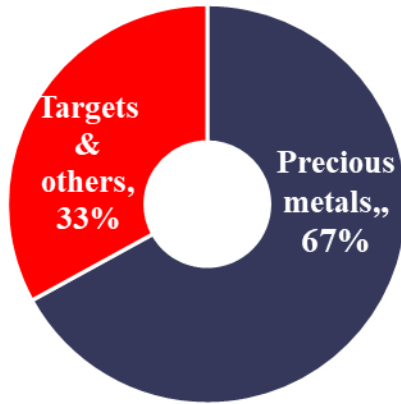


I.營運概況 Operational Overview

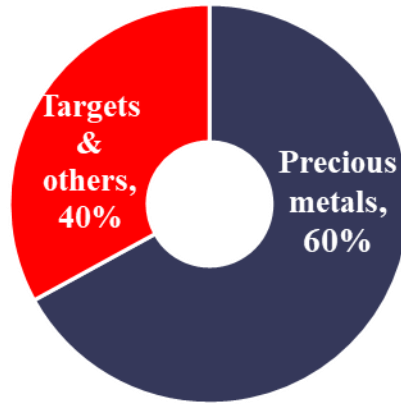
-產品營收比率 Sales Revenue Ratio by Product



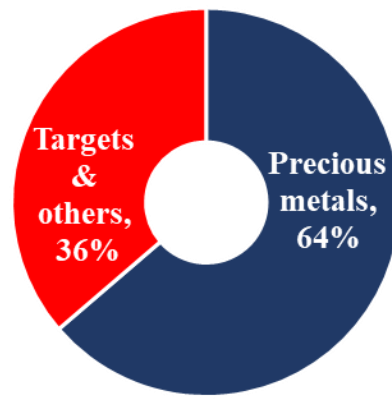
2021



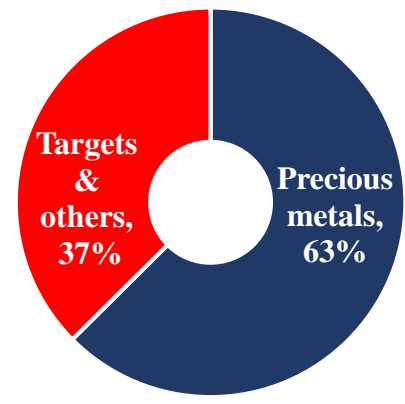
2022



2023



2024 Q1



公司轉變經營策略，藉由優化產品組合，增加高毛利產品營收占比。2024Q1年因面板需求持續回暖加上半導體用零組件銷售增加，致使高毛利產品比率增加。

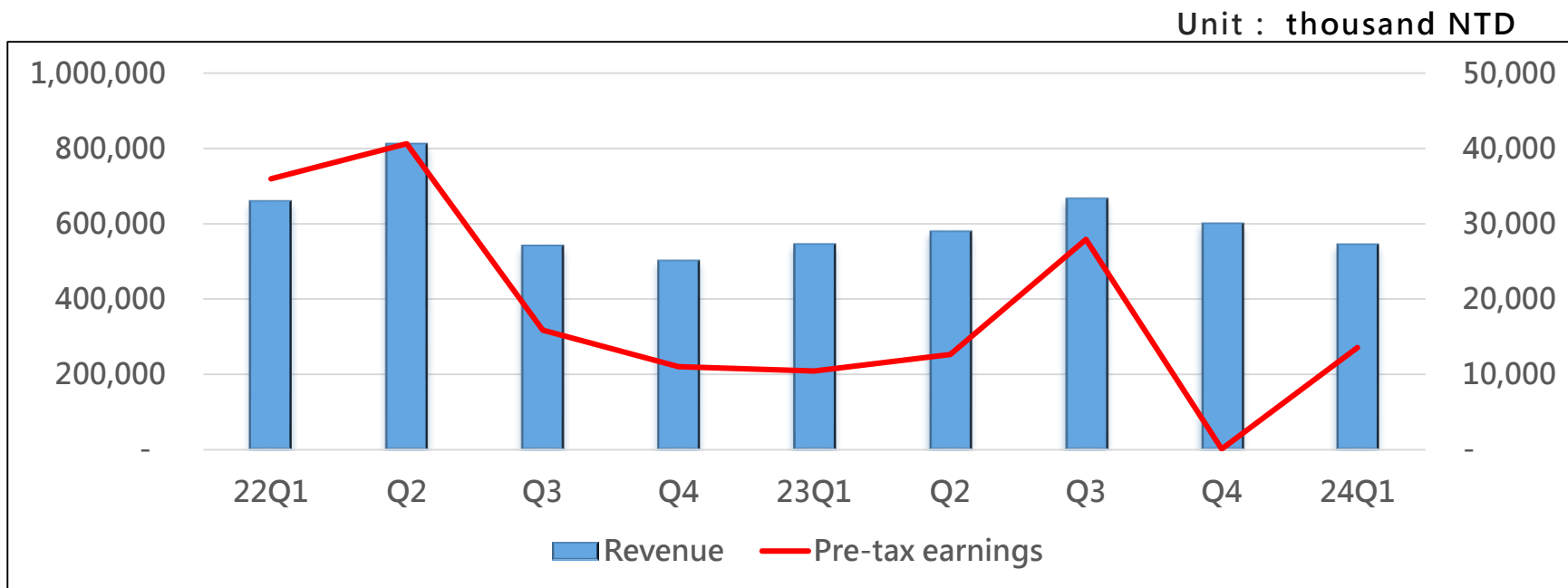
The company 's business strategy has changed by optimizing its product mix and increasing the revenue share of high-margin products. In the first quarter of 2024, demand for panels gradually rebounded and the increasing sale of semiconductor parts, thus contributing to the increase of high-margin products share.



I.財務績效 Financial Performance



- 合併營收及前三年稅前淨利 Consolidated revenue and pre-tax earnings for the past three years



2024Q1營收新台幣548 百萬元；稅前淨利新台幣13百萬元。

2024Q1 Revenue : 548 million NTD; Pre-tax earnings : 13 million NTD.

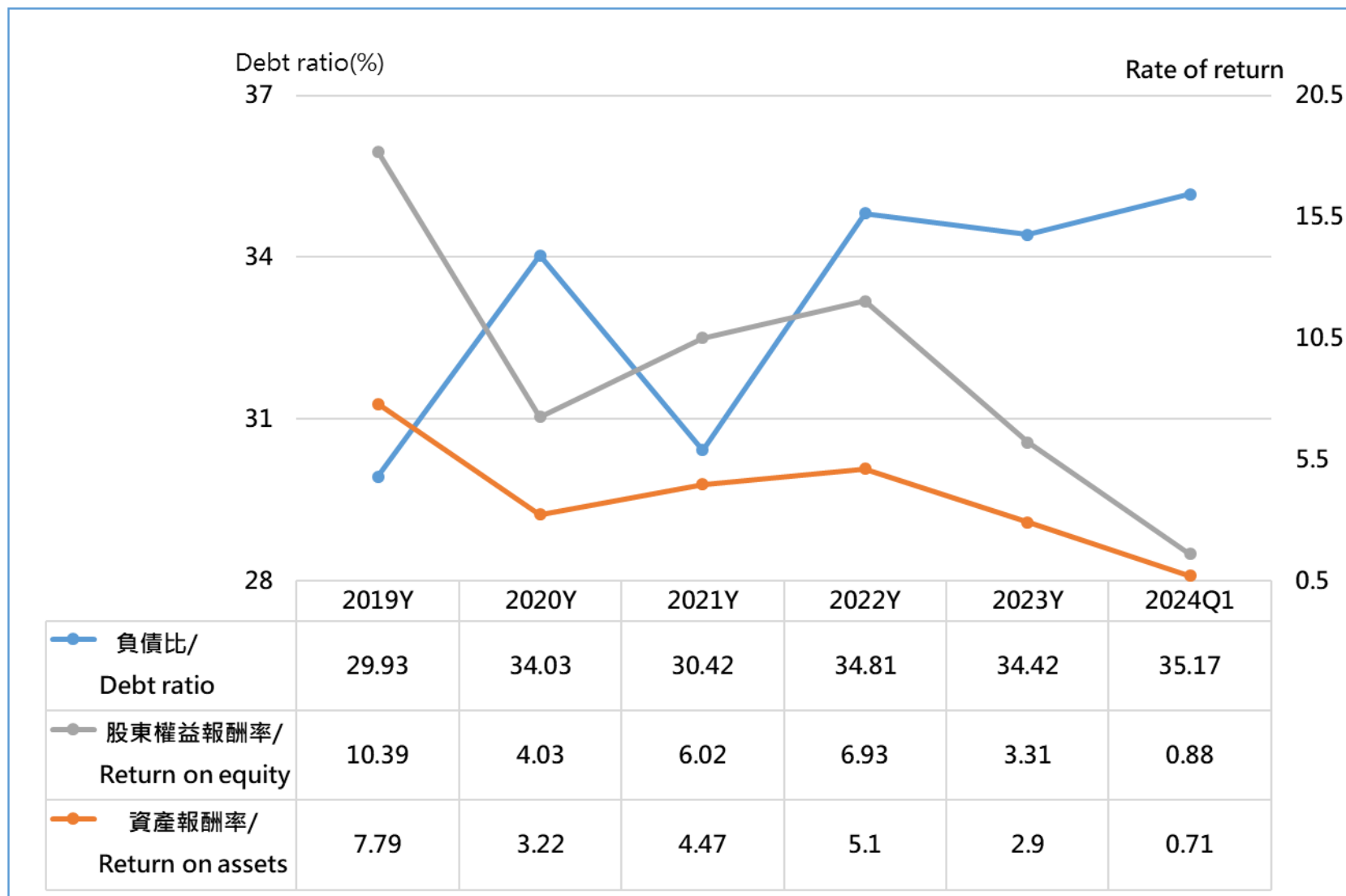
2023年營收新台幣2,405 百萬元；稅前淨利新台幣51百萬元

2023Year Revenue : 2,405 million NTD; Pre-tax earnings : 51 million NTD.



I.財務績效 Financial Performance

-重要財務指標 Key financial indicators



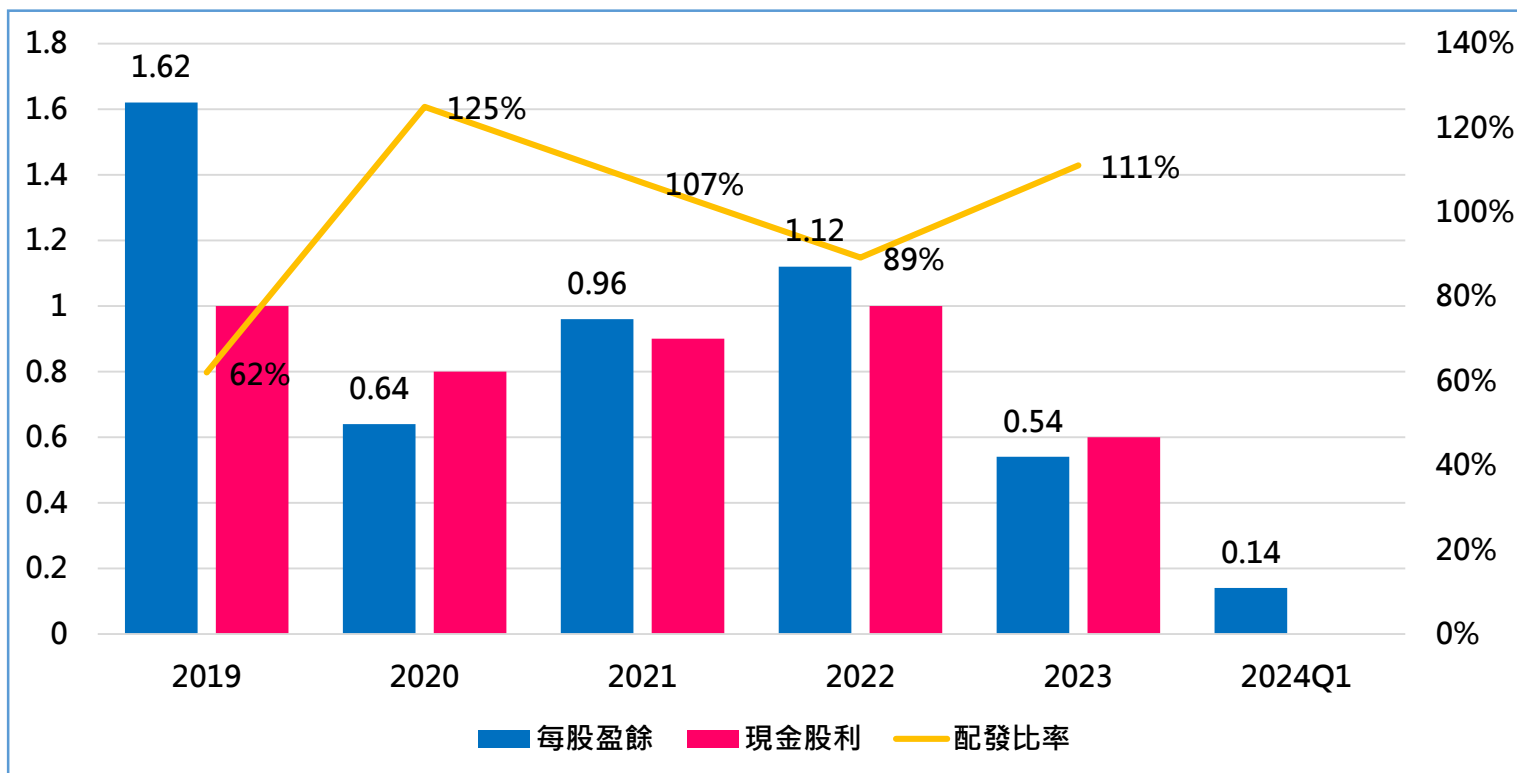


I.財務績效 Financial Performance



-每股盈餘及現金股利 EPS & Cash Dividend

Unit : NTD/per share



年度/Years	2019	2020	2021	2022	2023	2024Q1
每股盈餘/EPS	1.62	0.64	0.96	1.12	0.54	0.14
現金股利/ Cash Dividend	1	0.8	0.9	1	0.6	-



II. 中鋼精材整併 Mergement of CSPM - 中鋼精材公司概况 Profile of CSPM



- ✓ 中鋼精材成立於2011年，公司位於江蘇常州經濟開發區，原為中鋼集團重要子公司，專注於特殊合金生產。今年5月併入鑫科，現其有主要股東為鑫科(70%)及華新麗華(30%)。

CSPM was established in 2011. The company is located in Wujin Economic Development Zone, Changzhou City, Jiangsu Province, China. It was an important subsidiary of CSC Group, focusing on the production of specialty alloys. Now it was merged into TTMC. The main shareholders are TTMC (70%) and Walsin Lihwa Co.(30%) .

- ✓ 中鋼精材主要生產純鈦及鈦合金與鎳基合金，產品型態涵蓋厚板、捲帶、棒、管等，此兩類特殊合金佔全體營收約80%。

CSPM mainly produces pure titanium, titanium alloys, and nickel-based alloy, with forms of plates, strips, bars, and pipes, accounting for nearly 80% of the overall revenue.





II. 中鋼精材整併 Mergement of CSPM

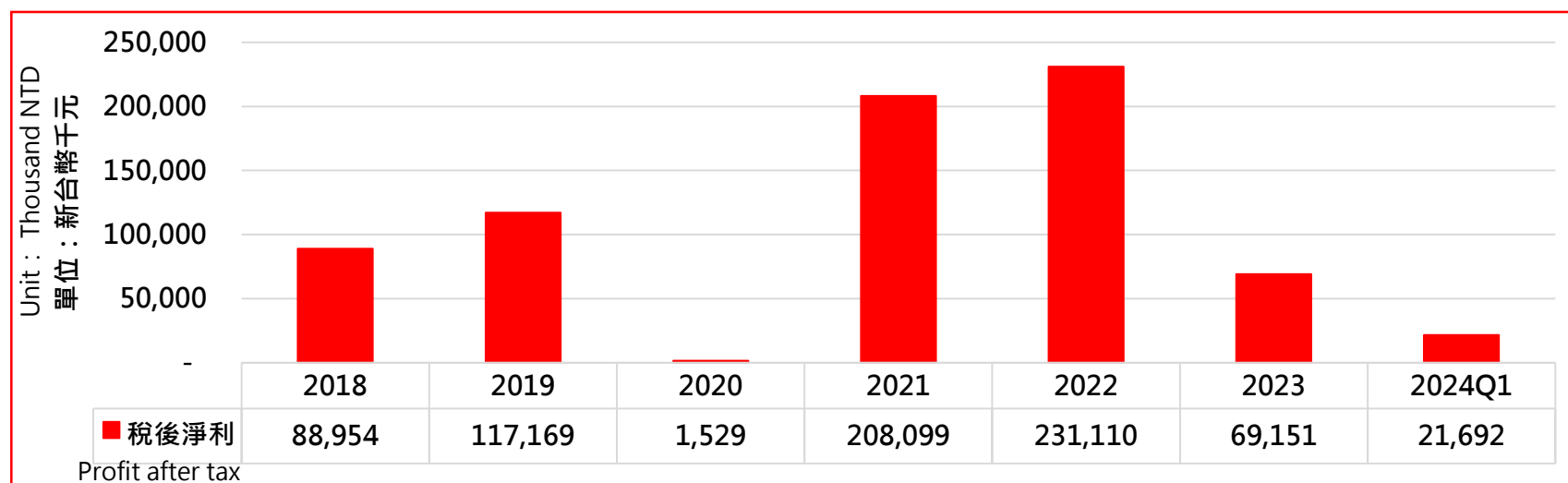


- 中鋼精材財務績效 Financial performance of CSPM

- ✓ 由於技術純熟且良好服務，中鋼精材鈦、鎳等主要產品在大陸市場已奠立穩健基石，市場銷售及公司獲利逐年成長，除2020年因市場金屬行情急速下跌導致銷售及獲利均創新低。

The CSPM' main products (Ti and Ni) have successfully established a foothold in China's market in recent years due to its mature technology and excellent service. Therefore, sales increase with market demand in the past, resulting in the growth of company's profits. Exception in 2020, revenue and profits were lower than expected, due to the sharp drop in market metal prices.

- ✓ 2024Q1中國經濟復甦不如預期，鈦產品及市場金屬行情雙雙下滑，導致獲利急速下降。
- The recovery of the Chinese economy in 2024Q1 is still less than expected, resulting in a decline in titanium product orders, and the decline in market metal prices has also caused a significant decline in gross profit margin.





II. 中鋼精材整併 Mergement of CSPM

- 上下游整合 Up- and Down-stream integration



製造技術垂直整合綜效

Vertical Integration Synergy on Target Manufacturing Technology

Raw Materials



Melting & Casting



Hot Forging



Surface Finishing

中 C
鋼 S
精 P
材 M

鑄錠熔鍛製成粗胚

Ingot Melting and Forging into Slab

Clean & Packaging



Machining



Diffusion bonding



TMP

鑫 T
科 T
材 M
料 C

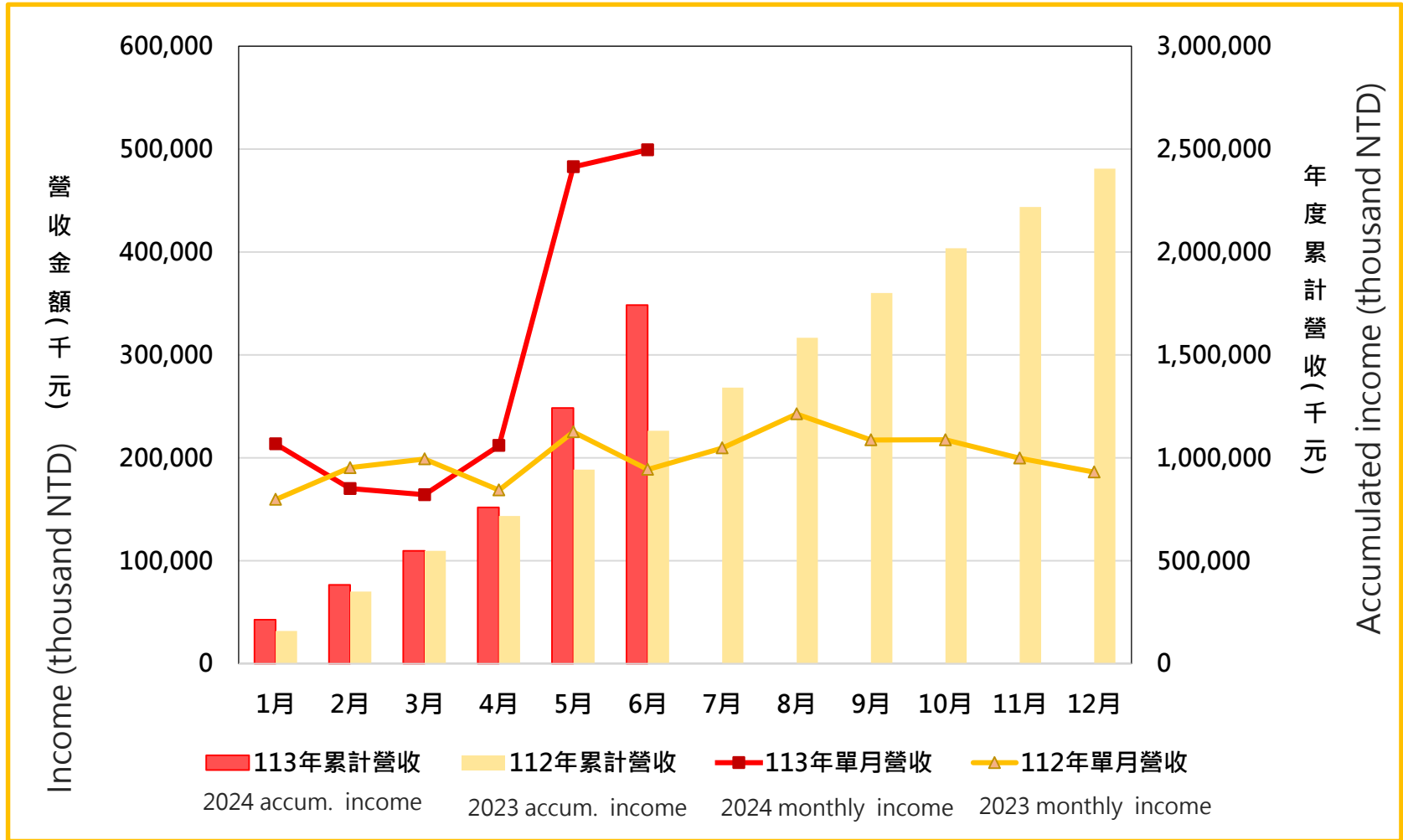
粗胚熱機處理/背板接合/機加工/清潔包裝

Slab ThermoMechanical Processed,
Bonded/Machining/Clean & Packaging



II. 中鋼精材整併 Mergerment of CSPM

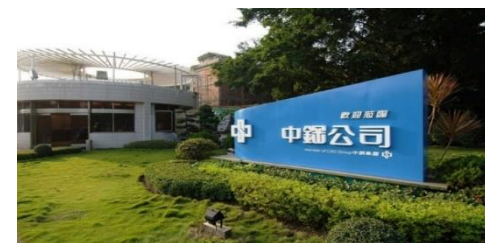
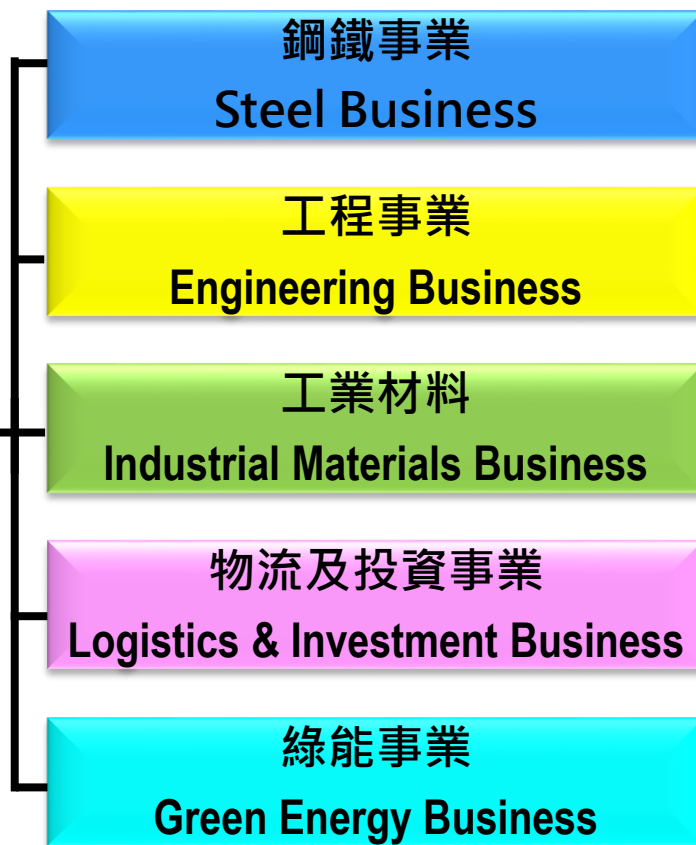
- 合併財務績效 Consolidated financial performance





III. 公司新樣貌 Company New Profile

- 工業材料事業群 Industrial Material Business Group



鑫科隸屬工業材料事業群，聚焦光電及半導體靶材，並擴及鈦鎳特殊合金生產，銷售版圖涵蓋台、陸、日、歐、美等。

TTMC belongs to Industrial materials business group, focusing on the production of optoelectric and semiconductor sputtering targets, and extending to Ti/Ni Specialty alloys. The market territory includes Taiwan, China, Japan, Europe and USA etc.

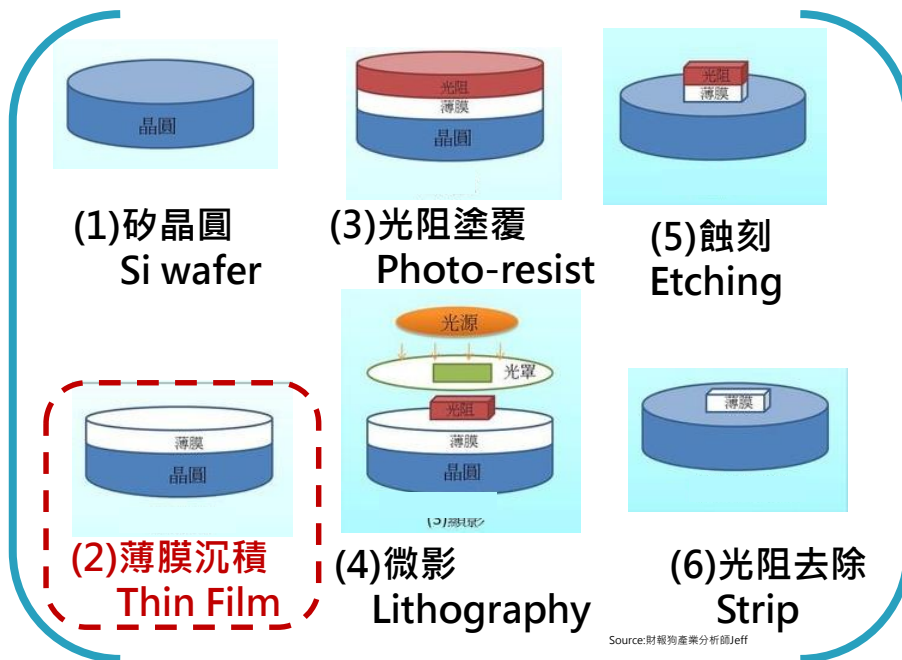


濺鍍靶材之應用 Application of Sputtering Targets

- Deposition of conduction thin film (IC FEOL)



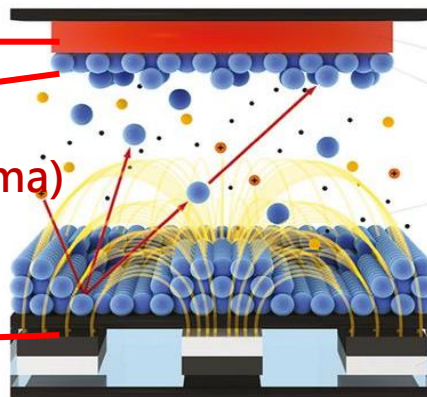
FEOL 前段製程 (semi)



矽晶圓(Si wafer)
薄膜 (Thin Film)

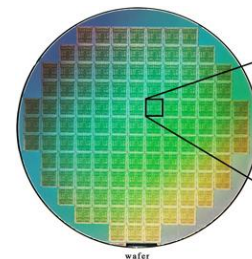
電漿(Plasma)

靶材(Target)



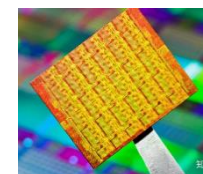
薄膜物理氣相沉積濺鍍製程

Thin film PVD sputtering process



晶圓
Wafer

Source: <https://www.techpowerup.com/review/nvidia-8800-gtx/>



裸晶片
Die

<https://arstechnica.com/gadgets/2018/01/whats-behind-the-intel-design-flaw-forcing-numerous-patches/>






後段封裝晶片
OSAT chip



III.公司新樣貌 Company New Profile



鑫科材料(TTMC)

<p>2000成立 founded</p> <p>2006遷入高科園區 move to KHH</p> <p>Science Park</p> <p>2012 上櫃</p> <p>TWSE OTC (3663)</p>	<p>Employers員工數(2024)</p> <p>209 (TTMC/TWN)鑫科</p> <p>32(TCMC/China)鑫昌</p> <p>160(CSPM/China)精材</p> 	<p>Capital 資本額(2023)</p> <p>US\$24.5M</p> <p>Revenue 營收</p> <p>US\$80.2M</p> <p>Major Holders 主要股東(2024)</p> <p>CSC Group 中鋼集團(54.4%)</p> <p>URECO 聯合再生(6.7%)</p> 	<p>QC/OHSMS品保/環安衛</p> <p>ISO 9001</p> <p>ISO 45001</p> <p>ISO 14001</p> <p>ISO 17025</p> <p>IECQ-QC 080000</p> <p>IATF 16949</p> <p>AEO</p>												
<p>Location廠址</p> <p>TTMC鑫科</p> <p>KHH Sci. Park1, Luke</p> <p>8th Rd., Lujhu District,</p> <p>Kaohsiung, TWN</p> <p>TCMC太昌鑫昌</p> <p>(Taichung, Jiangsu,</p> <p>China)</p> <p>CSPM常州中鋼精材</p> <p>(Changzhou, Jiangsu,</p> <p>China)</p>	<p><i>Southern Taiwan Technology Corridor</i></p>  <p>高科園區</p> <p>路科八路1號</p> <p>Plant area : 30,000m² ;</p> <p>Phase 1 : 2 Building , 18000m² ,</p> <p>Phase 2 : 12000m² available</p>	<p>Main products 主要產品</p> <table><tr><td>Sputtering Targets濺鍍靶材</td><td>Other products其他</td></tr><tr><td>TFT LCD/Touch panel (Flat/tube, Al, Mo, Cu, Ti)</td><td>Biomedical composites (BNCT moderator)</td></tr><tr><td>Optical data storage (ZnS, TRA-, TRB- series)</td><td>Parts Cleaning (Au, Ag...)</td></tr><tr><td>Crystal Oscillators/ Passive component (Ag, Ag-alloy series)</td><td>Sputtering parts (Taiko ring, sliding plate, FOPLP carrier...)</td></tr><tr><td>Tool/Decoration (Al, Cu, Ti, Ni-alloy series)</td><td>Industrial Ni-base alloy (Pickling hook, Furnace)</td></tr><tr><td>Semiconductor (Al-Cu, Ti, NiV, Ag, Au series)</td><td>Ti-wares (Cup-ware, Table-ware)</td></tr></table>		Sputtering Targets濺鍍靶材	Other products其他	TFT LCD/Touch panel (Flat/tube, Al, Mo, Cu, Ti)	Biomedical composites (BNCT moderator)	Optical data storage (ZnS, TRA-, TRB- series)	Parts Cleaning (Au, Ag...)	Crystal Oscillators/ Passive component (Ag, Ag-alloy series)	Sputtering parts (Taiko ring, sliding plate, FOPLP carrier...)	Tool/Decoration (Al, Cu, Ti, Ni-alloy series)	Industrial Ni-base alloy (Pickling hook, Furnace)	Semiconductor (Al-Cu, Ti, NiV, Ag, Au series)	Ti-wares (Cup-ware, Table-ware)
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III. 產品發展軌跡 Products Development Trace

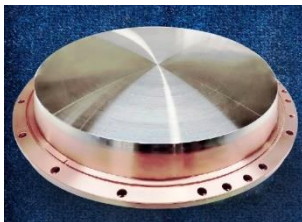


Products Development trace :

- Early(2000-2005) : Focus on Optical data storage (ODS) targets (Ag, Al, Dielectric)
- Middle(2006-2020) : extend to optical targets for decoration(DEC), passive components(PAC), Display, Crystal Oscillators (OSC) (Mo, Cu, Ti)
- Near(2021~2023) : launch into semiconductor (SEMI) industry, strategy: process from back to front end, Size from small to large, and targets accompanied with slugs.
- Now(2023~) : extend the application of Specialty Ti/Ni Alloys, such as FOPLP FeNi carrier plate and Smartphone Ti frame



半導體蒸鍍材
Semi Slug



半導體靶材
Semi target



ODS
光儲存媒體



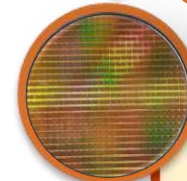
DEC & PAC
裝飾及被動元件



Display
面板



OSC
晶體振盪器

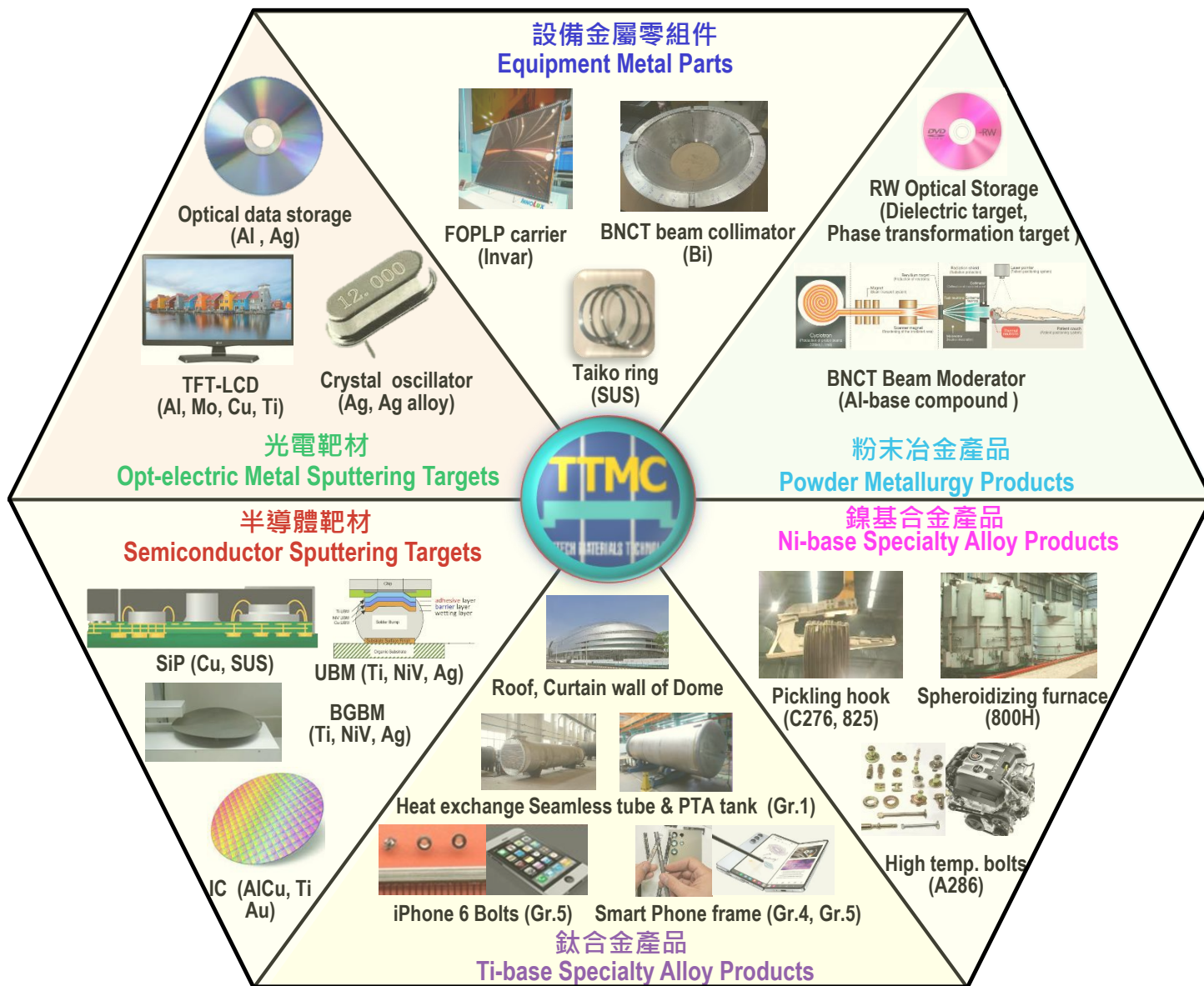


SEMI
半導體

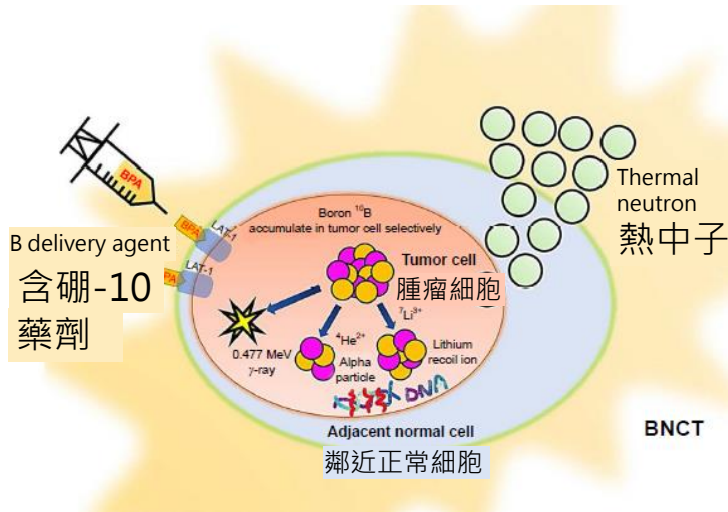


Ti/Ni
特殊合金

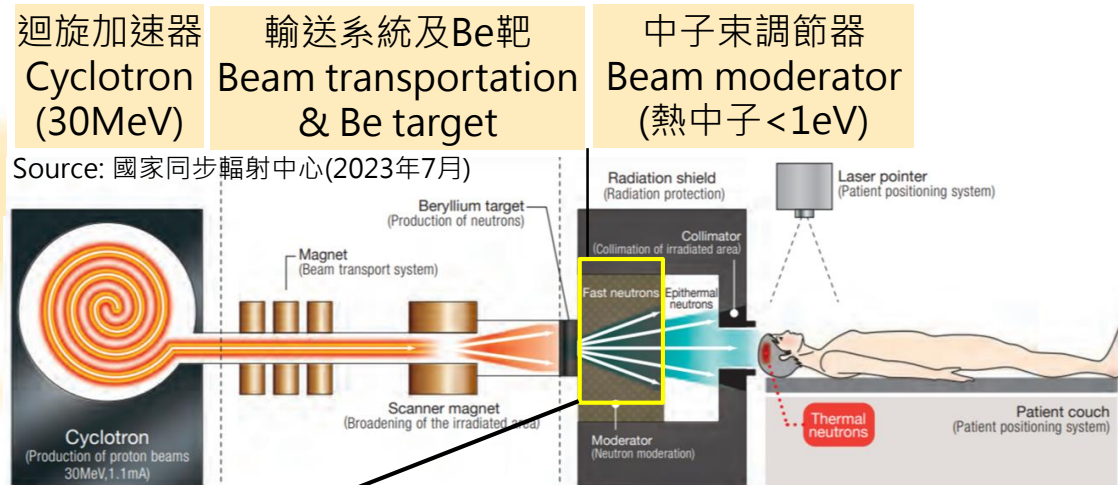




- ✓ 加速器型BNCT硼中子捕獲治療是利用低能量熱中子殺死腫瘤細胞卻又不嚴重影響正常組織細胞。為得到熱中子，加速器生成之高能中子需經調節器減速，中子調節器是由數種鋁基複合材料組合而成，鑫科獨家供應此調節器用生醫材料。
AB-Boron neutron capture therapy (BNCT) adopts the low energy thermal neutron ($< 1\text{eV}$) to kill tumor cells rather than normal cells. The high energy neutron must be deaccelerated through a moderator to get the thermal neutron. The moderator is mainly composed of various Al-base compounds, which are exclusively supplied by TTMC.



Source: 科儀新知 · 第236期(2023年9月)



中子調節器：由鋁基複合材料組合而成

Neutron moderator is composed of Al-base compounds



III.亮點產品 Product Highlights



- 面板級扇外型封裝載板 FOPLP Carrier

- ✓ 面板級扇外型封裝具高載板利用率及更大面積，金屬載板無玻璃易脆、高分子高熱膨脹係數 (CTE)不匹配等問題，已逐漸成為主流。

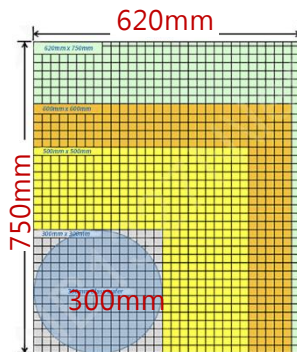
FOPLP is superior to FOWLP in terms of higher carrier utilization ratio and more space for dies. The carrier for FOPLP used can be metal, glass, or polymer. Since glass carriers are fragile and polymer carriers features high CTE mismatch, the metal carriers have become the mainstream of FOPLP carries.

- ✓ 高使用率FOPLP載板須能避免反覆封裝之翹曲/變形並降低壓模對die及SMD之應力。

In order to get better yield in repetitive packaging, FOPLP carrier needs to have low warpage/deformation to match with the expansion and contraction of the epoxy resin in packaging, and to introduce a low stress on die and SMD in compression molding.

- ✓ 開發成功可與樹脂熱膨脹匹配之金屬載板，滿足FOPLP製程嚴苛需求。

A dedicated alloy carriers with size up to 700mmx 700mm featuring similar CTE to resin are supplied to meet the severe requirement of FOPLP carrier.



G3.5 Panel (620mm x 750mm)

area ~ 6 times of 300mm wafer Source: 群創網站



World largest FOPLP (700mm x 700mm)

area ~ 7 times of 300mm wafer Source:三立新聞網(2023年9月)



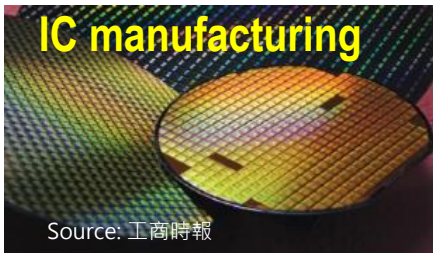
III. 亮點產品 Product Highlights

- 半導體金屬靶材/蒸鍍材 SEMI Metals Targets/Slugs



- ✓ 先進IC生產製程分成前段-IC製造、中段-晶圓減薄、後段-IC封裝。

The advanced IC manufacturing process can be divided into three stages: front-end (FEOL)- IC manufacturing, Middle-end (MEOL) - wafer thinning, and back end (BEOL)- IC packaging.



- ✓ 半導體靶材及蒸鍍材銷售量及客戶數逐步增加，銷售額占比由12.9%(2020)增至24%(2024H1)，客戶數由11家(2020)增至33家(2024H1)。

The proportion of targets and evaporation materials used for semiconductor users and the number of customers are gradually increasing. The revenue share in 2024H1 is increased from 12.9% in 2020 to 24%, and the number of customers has also grown from 11 to 33.

- ✓ 半導體材料應用由純矽跨足二、三代化合物。材料種類包括後段封裝用Cu, SUS, Ti，中段晶圓減薄用Ti, NiV, Ag，前段IC製造用Ag, Au, AlSi，和光洋科以銅及白金靶為主，有所區隔。

In addition to first-generation silicon semiconductors, it is also advancing into the field of second- and third-generation compound semiconductors. Its application areas include back-end packaging (Cu target, SUS target, Ti target), mid-end wafer thinning (Ti target, NiV target, Ag target) and front-end IC manufacturing (Ag target, Au target, Al-Si target), which is distinguished from SAMC front-end Cu alloy target and Ni-Pt target.



III. 半導體發展策略 SEMI Development Strategy



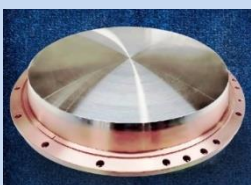
-由後向前兼顧化合物半導體 from BE to FE, inclding. Comp. Semi

標的客戶
Aimed users

應用 (金屬化薄膜)
Application (Metallization film)

鑫科材料 TTMC

Al/ Ti/ Cu/ Ta/ Au/ Ag/
NiV/ SUS
High Purity Metal
Target/ Slug



蒸鍍材
Semi Slug

靶材
Semi target

提高市占率
Increase market share

台積電
tsmc

聯電
UMC

世界先進
Vanguard

昇陽半
PSI

iST
宜特

微矽
MicroSilicon

日月光
ASE

矽品
SPIL

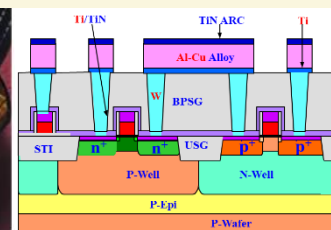
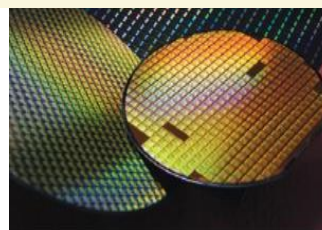
艾克爾
Amkor

前段製程
FEOL
-IC
fabrication

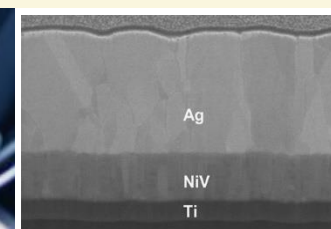
中段製程
MEOL
-Wafer
thinning
-FSM/BSM

後段製程
BEOL
-IC
packaging
-UBM
-Anti EMI

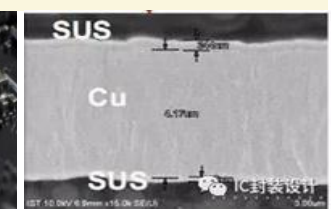
FEOL-IC fabrication targets (Al/Ti/Au)



MEOL-FSM/BSM targets (Ti/NiV/Ag)



BEOL-Anti EMI Targets (Cu/SUS)





III. 特殊合金商機 Opportunity of Specialty Alloy



- ✓ 鈦邊框具輕盈、耐磨、多色彩性廣泛應用於高端3C產品，中鋼精材已通過3C大廠驗證，為公司未來獲利產品之一。

Ti alloys, featuring light weight, wear durability, and multi-color availability, are widely used in cell phones, laptops, VR and other wearable electronic products. CSPM is qualified to be the raw material supplier of the Ti frames .



Source: Samsung網站

智慧型手機鈦邊框
Smartphone Ti frames

- ✓ 中鋼精材開發成功原只有日本才能製作之銲接型銅箔陰極鈦輥且今年將進入量產，將為公司帶來顯著獲利。

Welded copper foil cathode titanium rolls featuring low-cost and high-quality are Japan-made unique products. CSPM has successfully broken through the key technology and will launce into mass production this year. It is expected to contribute the revenue remarkably.



銅箔陰極鈦輥
Cu Foil Cathode Ti Roll

Thanks for Your Attention



New Vision Of Materials Application