

Plus

Metal Tech

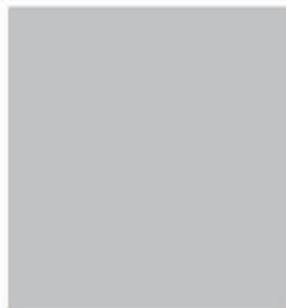
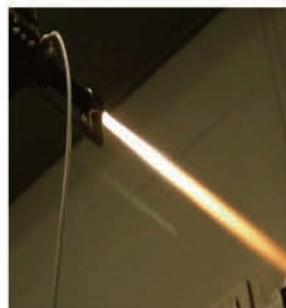
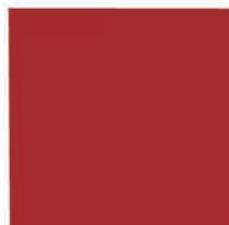
宏進金屬科技股份有限公司

Plus Metal Tech Co., Ltd.

冷噴塗 Cold Spray



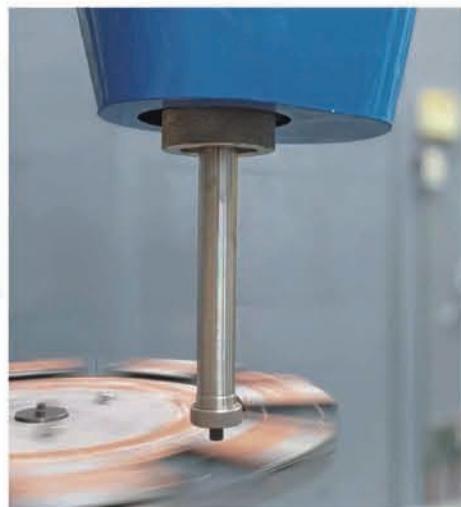
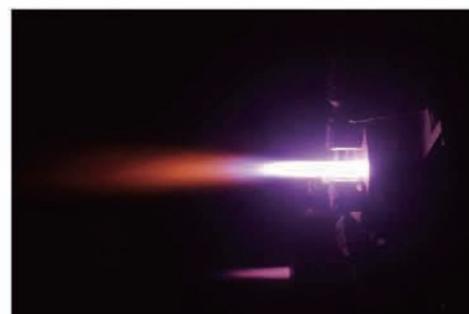
絕緣
Insulation



導電
Electrical Conduction



導熱
Thermal Conduction



熱阻絕
Thermal Barrier



耐磨耗
Wear Resistance



抗腐蝕
Corrosion Resistance



抗氧化
Oxidation Resisance



尺寸修復
Restoration & Repair



熱噴塗 Thermal Spray

IATF 16949:2016
ISO 9001
AS 9100

BUREAU VERITAS
Certification

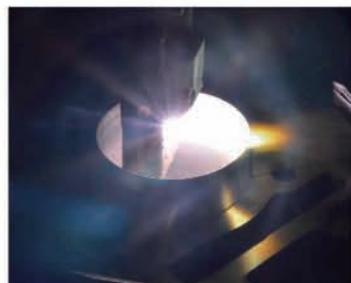
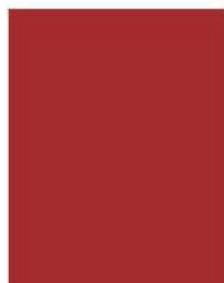


BUREAU VERITAS
Nadcap

Administered by PRI

ACCREDITED

真空硬鋸 Vacuum Brazing



目 錄 Index

- 品質政策 1
Quality Policy
- 公司沿革 2~3
History
- 技術與研發 4~5
Technology and R&D
- 噴塗簡介 6~7
Introduction of Spray Coating
- 服務內容 8~16
Services



噴塗 Spray Coating	8
硬面鋸覆 Hardfacing	9
軋件/軸套/襯套OEM製新 Roller/Bush/Sleeve OEM	9
現場熔射 On-site Coating Service	9
機械加工 Machining	10
自動化量產服務 Automatic Mass Production	10
材料代理銷售 Welding/Coating Material Sales	10
真空硬鋸 Vacuum Brazing	11
高壓冷噴塗 High Pressure Cold Spray	14

- 產業實績-燃料電池與其它產業 17
Fuel Cell & Other industries
- 產業實績-鋼鐵業 18
Iron and Steel Industry
- 產業實績-造紙業 21
Paper Making Industry
- 產業實績-石化業 22
Petrochemical Industry
- 產業實績-汽電業 24
Combined Heat and Power (CHP) Industry
- 產業實績-紡織化纖業 25
Textile Industry



品質政策

Quality Policy

誠信是原則，創新是過程，品質是目標。

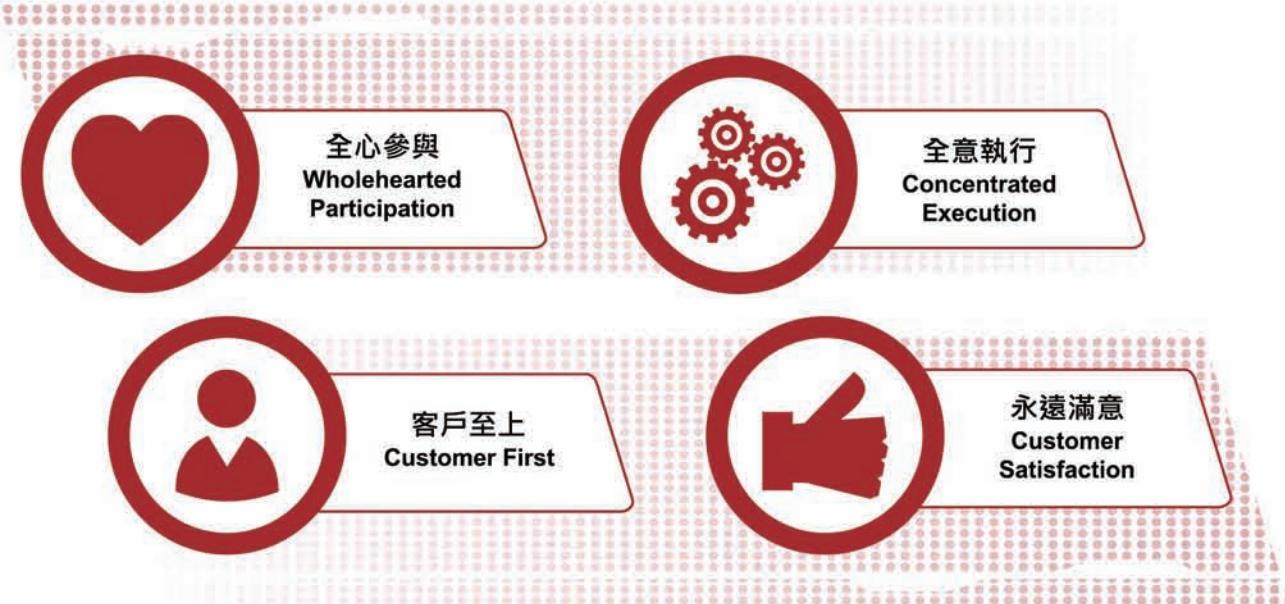
Principle of Honesty , Practice of Innovation , Goal for Quality

為追求品質穩定，本公司於2017年取得ISO 9001:2015品質管理系統認證。

本公司亦投入百萬，建置製程監控系統，以科學化的方式即時掌握製程特性，確保品質穩定。

To achieve quality stability, PMT obtained ISO 9001:2015, quality management system (QMS) certification.

To enhance process control accuracy, we also invested several millions NTD in process diagnostic system.



Bureau Veritas Certification



ISO 9001



IATF 16949



AS 9100



德國驗船協會(GL)
焊接品質認證
GL Welding Certification



NADCAP Coatings

公司沿革

History

- 
- 2023年 1月 取得NADCAP Coatings 特殊製程認證。
- 2020年 1月 取得IATF 16949 : 2016認證。
- 12月 取得ISO 9001:2015 認證及IATF 16949:2016 符合性認證。
- 2018年 11月 取得AS 9100:2016 認證 (EN 9100:2018)。
- 9月 資本額增資為2億元。
- 2016年 7月 完成太陽能光電發電系統安裝。
- 1月 越南合資公司成立。
- 10月 獲得美國固態氧化物燃料電池系統廠之優良供應商認可。
- 2015年 11月 獲得臺南市政府「創新研發績優企業獎」。
- 2014年 6月 新化廠落成典禮，正式啟用。
- 2013年 10月 獲得經濟部「傑出SBIR產業升級獎」。
- 2012年 2月 通過德國驗船協會GL認證。
- 11月 獲得臺南市政府「創新研發績優企業獎」。
- 2011年 2月 取得ISO 9001:2008認證。
- 2010年 3月 通過美國固態氧化物燃料電池系統廠品質認證。
- 9月 資本額增資為5000萬元，公司名稱變更為宏進金屬科技股份有限公司。
- 1月 取得台塑關係企業噴焊工程合約，涵蓋全國各廠區。
- 2008年 6月 宏進金屬科技有限公司成立，資本額新台幣2000萬元。

Company History

- 
- A timeline of the company's history from 2008 to 2023, marked by red dots on a vertical axis. Each dot corresponds to a specific event with a date and a brief description.
- 2023 Jan, Obtained Nadcap Coatings certification
 - 2020 Jan, Obtained IATF 16949: 2016 certification
 - Dec, Obtained ISO 9001:2015 & IATF 16949:2016 certification in December, 2018
 - 2018 Nov, Obtained AS 9100:2016 certification (EN 9100:2018) in December, 2018
 - Sep, Capital was increased to two hundred million NTD.
 - 2016 Jul, Completed the installation of solar energy conversion system
 - Jan, Joint venture company in Vietnam was founded.
 - 2015 Oct, Gained the recognition of coating service for the leading solid oxide fuel cell (SOFC) system integrator in the US.
 - 2014 Nov, Won the award of "Industry Innovation" from Tainan City Hall.
 - Jun, The new facility in Shin-Hua city was officially started operation.
 - 2013 Oct, Obtained the "SBIR Industry Evolution Award" from Ministry of Economic Affairs.
 - 2012 Feb, Passed the Germanischer Lloyd (GL) certification in welding.
 - Nov, Won the award of "Industry Innovation" from Tainan City Hall.
 - Feb, Obtained the certification of ISO 9001:2008
 - 2010 Mar, Passed the quality certification for the leading solid oxide fuel cell (SOFC) system integrator in the US.
 - Sep, Capital increased to fifty million NTD.. Company type revised from "Limited (Ltd.)" to "Corporation (Co.)"
 - 2008 Jan, Obtained contract in coating service for Formosa Plastics Group, which is the leading petrochemical company in Taiwan.
 - Jun, Plus Metal Tech Ltd. was founded in Tainan, Taiwan with capital twenty million NTD.

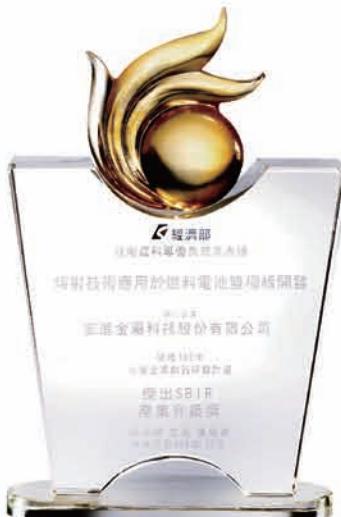


技術與研發 Technology and R&D

技術與研發團隊 (Technical and R&D Team)

我們的研發團隊由台大等頂尖學府碩博士所組成，技術團隊具有30年的實務經驗，技術經驗包括鋼鐵、造紙、紡織、石化、發電等傳統產業，以及光電、半導體、燃料電池等高科技產業。為保持技術的精進，我們持續與國內外之產/學/研單位交流合作，並於102年榮獲經濟部頒發「傑出SBIR產業升級獎」。

Our technical team consists of members with over-30-year experience in thermal spray field.
Material analyst and researcher come from mechanical/ chemical/ material fields in top universities.
We have plentiful experiences of thermal spray in the field of traditional and high-tech industries.
To keep being progressive, we keep cooperating with institutes and other companies continuously.
We won "SBIR Industry Evolution Award" from Ministry of Economic Affairs, R.O.C.in 2013.



經濟部SBIR產業升級獎
SBIR Industry Evolution Award
from Ministry of Economic Affairs, Taiwan.



美國固態氧化物燃料
電池系統整合公司
所頒發的優良供應商服務認可
Recognition of coating service from
the leading solid oxide fuel cell (SOFC) system
integrator in the US.



2014創新研發績優企業獎
Industry Innovation Award
from Tainan City Hall(2014)



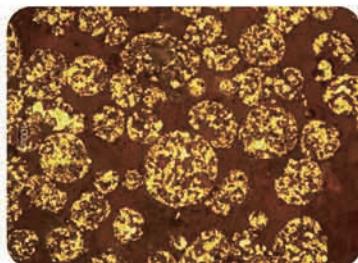
中華民國專利證書
Patent Certificate
from Taiwan.



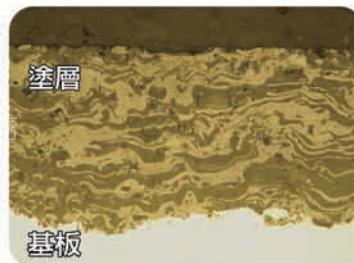
台南市創新研發績優企業獎
Industry Innovation Award
from Tainan City Hall(2011)

材料與塗層分析技術 (Material Analysis)

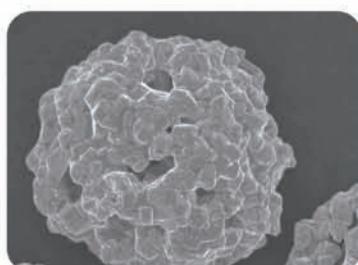
• 材料結構分析(Metallographic Structure and Microstructure)



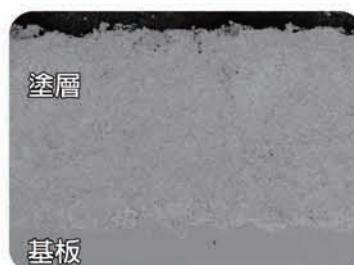
粉末金相結構
Metallographic Structure (Powder)



塗層金相結構
Metallographic Structure (Deposition)

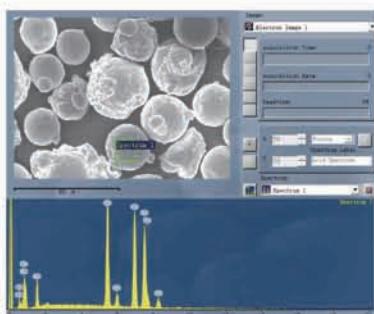


粉末SEM微結構
SEM Microstructure (Powder)

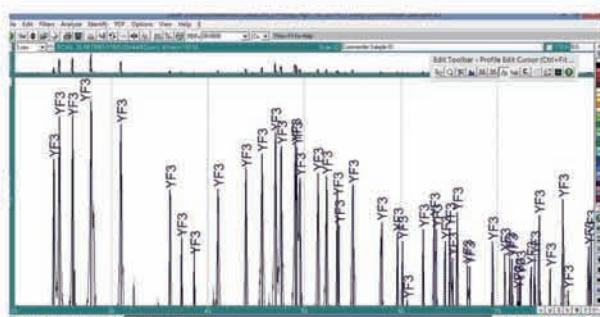


塗層SEM微結構
SEM Microstructure (Deposition)

• 元素與晶格結構分析(Analysis of Elements and Crystal Structure)



EDS元素分析
EDS Elemental Analysis



XRD晶格結構分析
XRD Crystal Structure Analysis

• 材料應用特性分析(Test for Material Characteristics)



維氏硬度分析
Vickers Hardness



往復式磨耗試驗機
Abrasive Tester



鹽霧試驗機
Salt Spray Tester



萬能試驗機
Universal Testing Machine

噴塗簡介

Introduction of Spray Coating

為何需要覆膜工程？(Why Coating ?)

覆膜工程可改變表面特性，使工件在特殊環境(譬如磨耗、腐蝕、高溫...等)具有較長的使用壽命，或者具備特殊功能(譬如絕緣性、高溫導電性、電磁遮蔽、裝飾...等)。

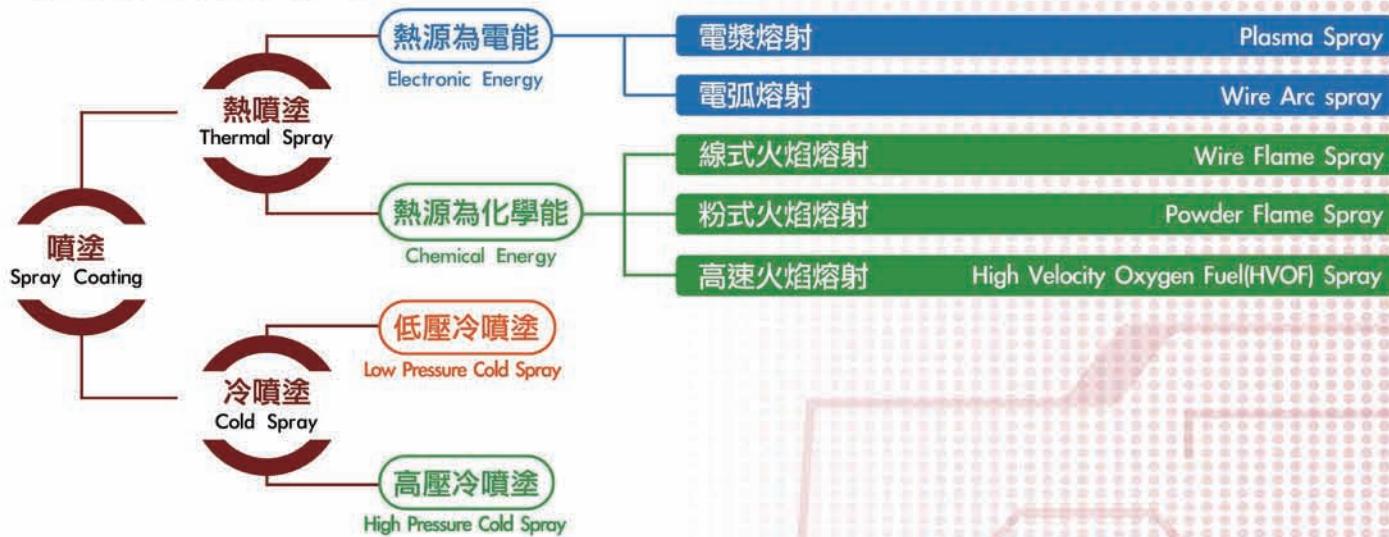
Coating engineering can change the surface properties of working parts to be used in the harsh environment for a longer life time , or have special functions.

常見的覆膜技術特性可參考下表：(Characteristics of different coating technologies)

製程 Process	塗層材料 Coating material	製程特性與限制 Properties and Limits
電鍍 Plating	金屬、合金 Metal, Alloy	塗層材料限於金屬類，對環境影響較大，成膜速率慢，膜厚受限大。 Deposit is limited to metal/alloy, lower coating efficiency, pollution issues and coating thickness.
雷射鋸覆 Laser Cladding	金屬、合金、 陶瓷 Metal, Alloy, Ceramic	成本高，成膜速度較慢。 Higher cost and lower coating efficiency.
噴塗 Spray Coating	金屬、合金、 陶瓷、高分子 Metal, Alloy, Ceramic, Polymers	成膜速度較快，塗層材料選擇多元，污染性低。 Widely choices of coating material, higher coating efficiency and less pollution.
潛弧鋸覆 Submerge Arc Hardfacing	金屬、合金 Metal, Alloy	塗層材料限於金屬類，基材限於導電材料，熱影響區較小。 Smaller heat effected area, but deposit is limited to metal/alloy, and substrate is limited to conductive material.
明弧鋸覆 Open Arc Hardfacing	金屬、合金 Metal, Alloy	塗層材料限於金屬類，基材限於導電材料，熱影響區較小。 Smaller heat effected area, but deposit is limited to metal/alloy, and substrate is limited to conductive material.

噴塗有哪些種類？(Classification of Spray Coating)

噴塗技術可依熱源分類如下：



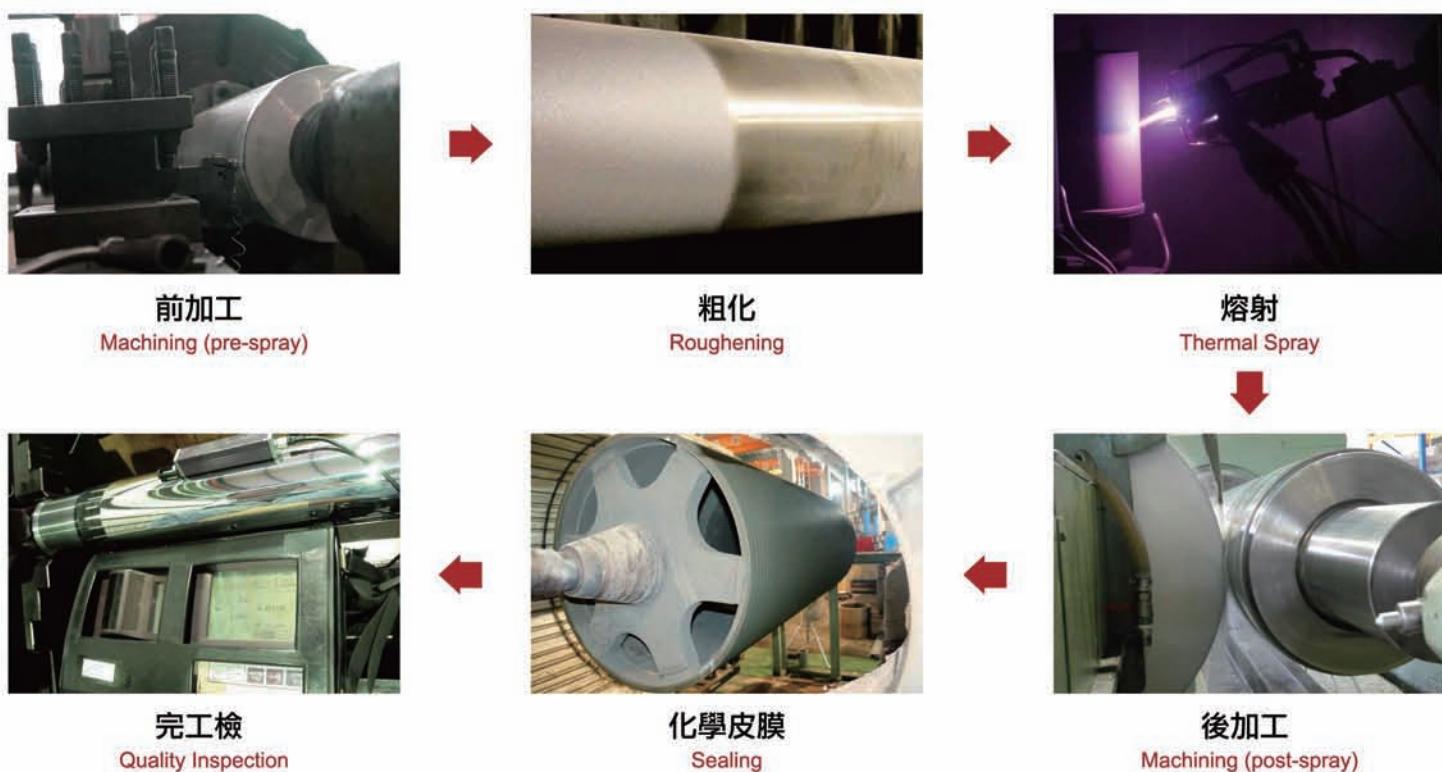
如何選擇塗層材料? (Which Material Is Better?)

常見的塗層需求，以及可選用的熔射材料如下表：

塗層應用 Coating application	選用材料 Material
耐磨耗 Wear Resistance	鈷基合金、鎳鉻-碳化鉻、鐵基合金 Co-based alloy、NiCr-Cr ₃ C ₂ 、Fe-based alloy
抗沖蝕 Erosion Resistance	鎳鉻-碳化鉻、碳化鎢瓷金 NiCr-Cr ₃ C ₂ 、WC-CoCr
導熱 Thermal Conduction	銀、銅、鋁 Ag、Cu、Al
熱阻絕 Thermal Barrier	氧化鋁、鈦穩定氧化鋯 Al ₂ O ₃ 、YSZ
抗腐蝕 Corrosion Resistance	鋁/鋅、鎳基合金、(鈷、鎳)鎗鋁鈦合金、氧化鋁 Al/Zn、Ni-based alloy、MCrAlY(M=Co、Ni)、Al ₂ O ₃
抗氧化 Oxidation Resistance	鎳鉻合金、(鈷、鎳)鎗鋁鈦合金、氧化鋁 Ni-Cr alloy、MCrAlY(M=Co、Ni)、Al ₂ O ₃
導電 Electrical Conduction	銀、銅、鋁 Ag、Cu、Al
介電 Dielectric	氧化鋁 Al ₂ O ₃
絕緣 Insulation	氧化鋁、氧化鋯 Al ₂ O ₃ 、ZrO ₂

熔射製程程序為何？(Procedures of Thermal Spray)

熔射製程程序大至如下，選擇性的額外程序(化學皮膜)用以提高塗層之品質：



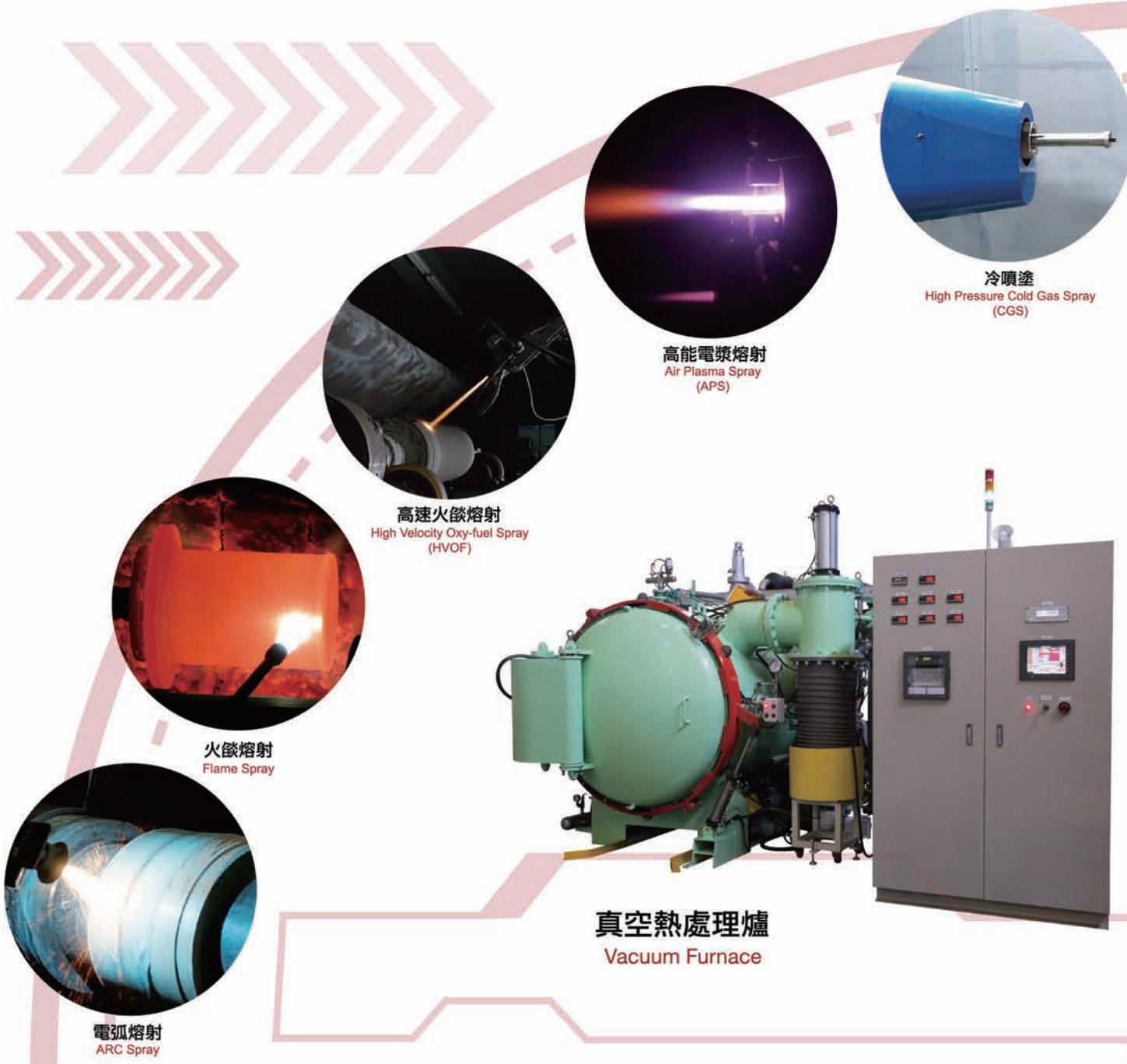
服務內容 Services

技術與服務簡介

宏進金屬擁有多元化的熔射與硬面鋸經驗，我們的技術項目包含合金 / 陶瓷噴塗、硬面鋸覆、機械加工，提供的服務項目包含金屬件OEM製新、舊品維修翻新、現場熔射施工、設備與材料代理等服務。

過去三十年，宏進團隊的服務產業實績包含了鋼鐵、石化、造紙、閥業、農機、紡織、發電廠、光電、半導體、燃料電池...等，並長期為中鋼集團、台塑集團等企業提供服務。

► 噴塗 (Spray Coating)



■ Introduction of services and technologies

Core technologies of Plus Metal Tech Co. Ltd. includes alloy/ceramic spray coating, hardfacing and machining. We provide services of metallic parts OEM, restoration, on-site coating and agent with equipment and material. In the past 30 years, we have been serving for the industries of steel, petrochemical, pulp-paper, valve, agricultural machinery, textile, power-plant, optoelectronics, semiconductor and solid oxide fuel cell (SOFC). We appreciate to be a long-term partner with companies like China Steel Corporation (CSC) and Formosa Plastics Corporation.

► 硬面鋸覆 (Hardfacing)



明弧鋸覆Open Arc
10 ton Max Loading



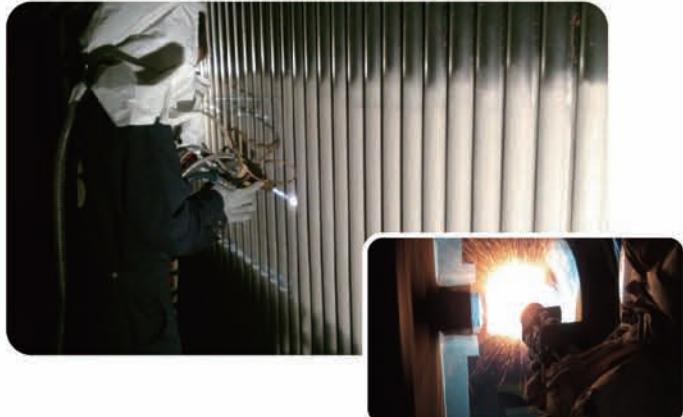
潛弧鋸覆Submerge
4M Max Travel

► 輪件/軸套/襯套OEM製新 (Roller/Bush/Sleeve OEM)



造粒輥機軸
Shaft of Granulator Roll

► 現場熔射 (On-site Coating Service)



爐管排現場熔射
On-site Coating for Boiler Tubes

服務內容

► 機械加工(Machining)



車床
Lathe
 $\phi 1.2 \times 6.0m$
 $\phi 1.6 \times 3.0m$



NC 車床
NC Lathe
 $\phi 0.52 \times 1.1m$
 $\phi 0.58 \times 0.89m$



外圓NC磨床
Cylindrical NC Grinder
 $\phi 1.0 \times 5.0m$



超鏡面拋光
Mirror Polishing

► 自動化量產服務 (Automatic Mass Production)



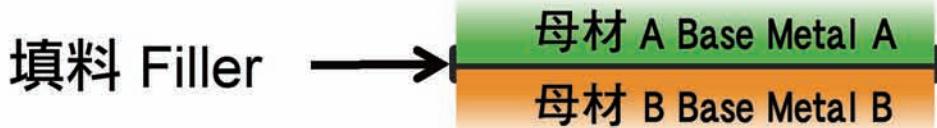
自動化檢測服務
Automatic Defect Inspection



自動化量產服務
Automatic Mass Production

► 材料代理銷售(Welding/Coating Material Sales)

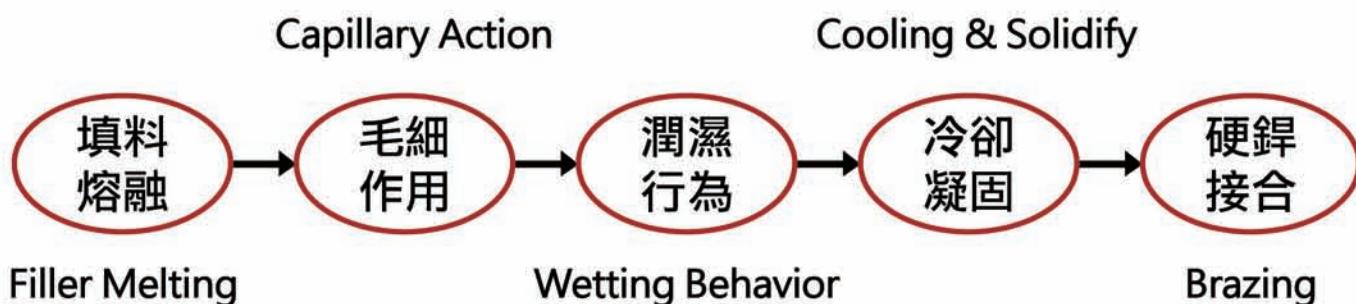
► 真空硬鋸 (Vacuum Brazing)



真空硬鋸原理 (Vacuum Brazing Principle)

在欲接合的兩個母材之間置入填料，於真空爐中加熱使填料液化，藉由液化填料的毛細現象與潤濕效果將填料均勻地填充在兩個母材塊體間並與之產生冶金鍵結，冷卻凝固後即完成兩母材（同質或異質）的接合。

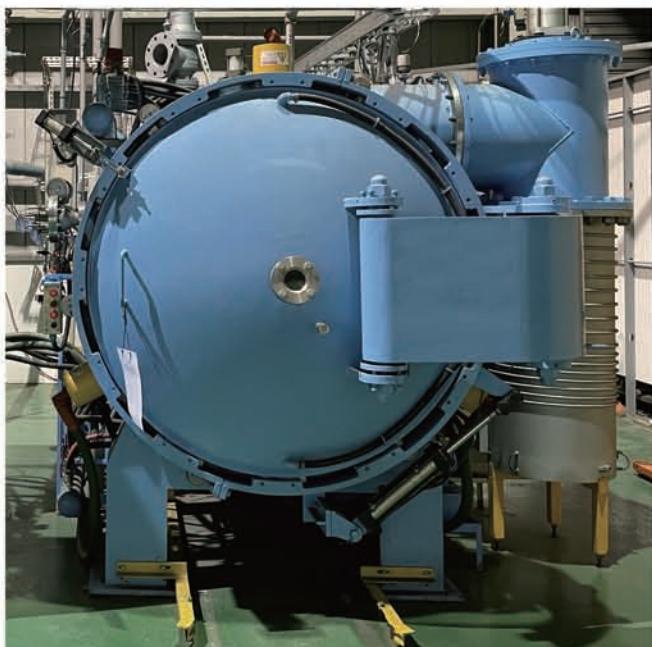
A filler metal is filled between the two base metals which are to be jointed. During the heating process in vacuum furnace, the filler metal transforms from solid to liquid phase. The molten filler metal flows and uniformly distributes between the two base metals by Capillary and Wetting effect. The base metals are then well jointed by metallurgical bonding mechanism when the process cools down.



產業應用 (Applications)

- 半導體設備零組件 (Showerhead, Cooler,...等)
Parts of semiconductor process equipments (Showerhead, Cooler,...etc)
- 靶材背板
Target backing plate
- 各式水路冷卻板
Water cooling plate
- 散熱 (散熱鰭片、高功率散熱模組....等)
Heat dissipation (pin fin for heat sink, high-power thermal module...etc)
- 其他大面積接合件
Other

高真空硬鋸爐 (High-vacuum Brazing Furnace) :



#1 鋁硬鋸專用爐

Furnace for Aluminum Brazing

項目 Item	製程規格 Process Specifications
有效溫區 Hot Zone	600*600*900mm
加熱能力 Heating Capacity	Room temperature to 1300°C
真空能力 Vacuum Capacity	10 ⁻⁵ torr

#2 高溫材料硬鋸專用爐

Furnace for High Temperature Brazing



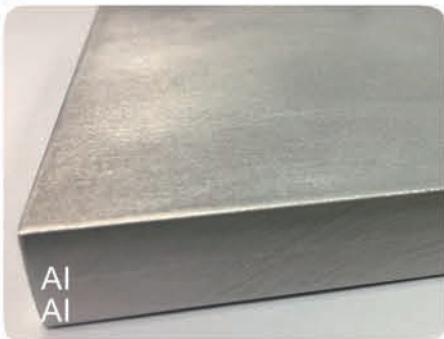
項目 Item	製程規格 Process Specifications
有效溫區 Hot Zone	800*800*1200mm
加熱能力 Heating Capacity	Room temperature to 1300°C
真空能力 Vacuum Capacity	10 ⁻⁵ torr

製程專業 (Process Specialty)

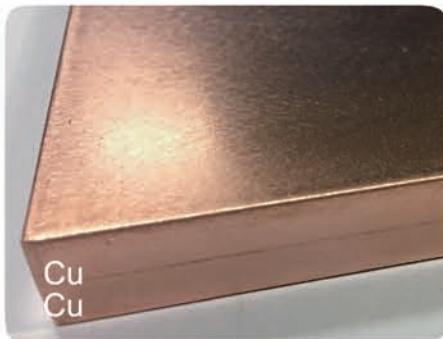
- 同質材料接合，包括活性金屬(例如：鋁、鈦...等)
Joint of similar materials-incl. active metal(Ex : Al、Ti...etc)
- 異質材料接合，包括金屬與陶瓷
Joint of dissimilar materials-incl. metal and ceramic
- 無氧化，高精度，高強度
No oxidation, high precision, high strength

► 應用與實績 (Applications and Achievements)

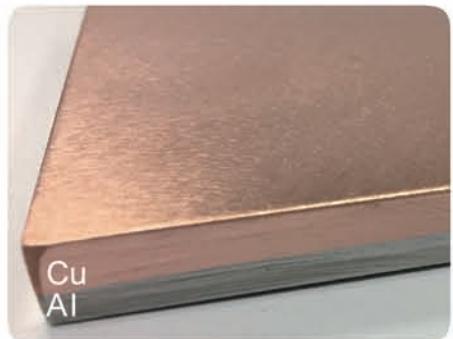
鋁、銅金屬及合金之真空硬鋸接合介面 (Interface of Vacuum Brazed Al/Cu Specimen)



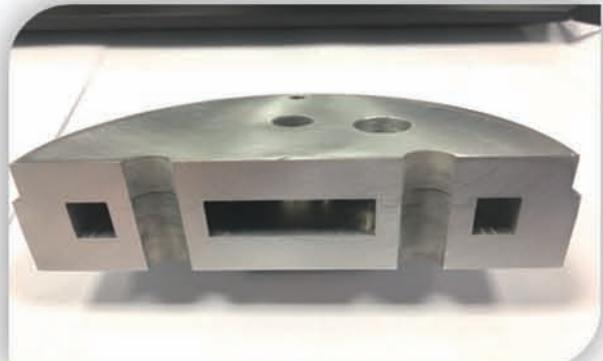
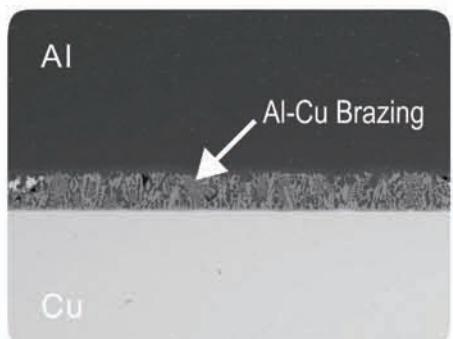
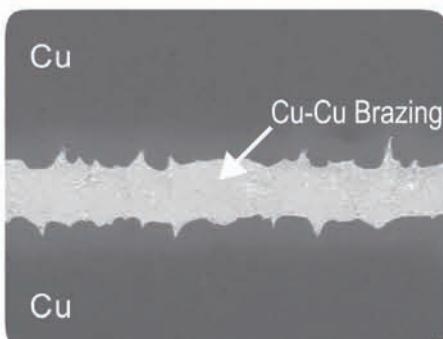
鋁-鋁 接合
Al-Al Brazing



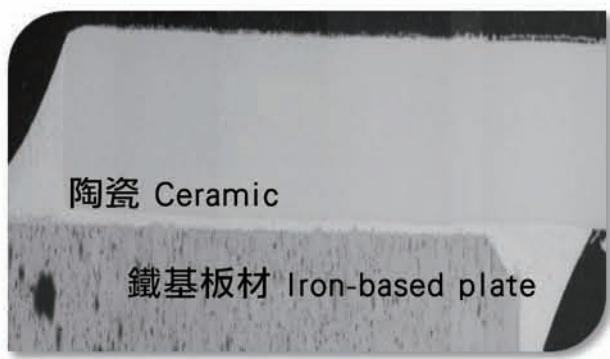
銅-銅 接合
Cu-Cu Brazing



鋁-銅 接合
Al-Cu Brazing



半導體設備鋁合金水冷板 Liquid Cooling Plate of Semiconductor Process Equipment



陶瓷 Ceramic

鐵基板材 Iron-based plate

陶瓷與金屬之接合

Vacuum Brazed Ceramic and Metal



鋁合金與銅之接合

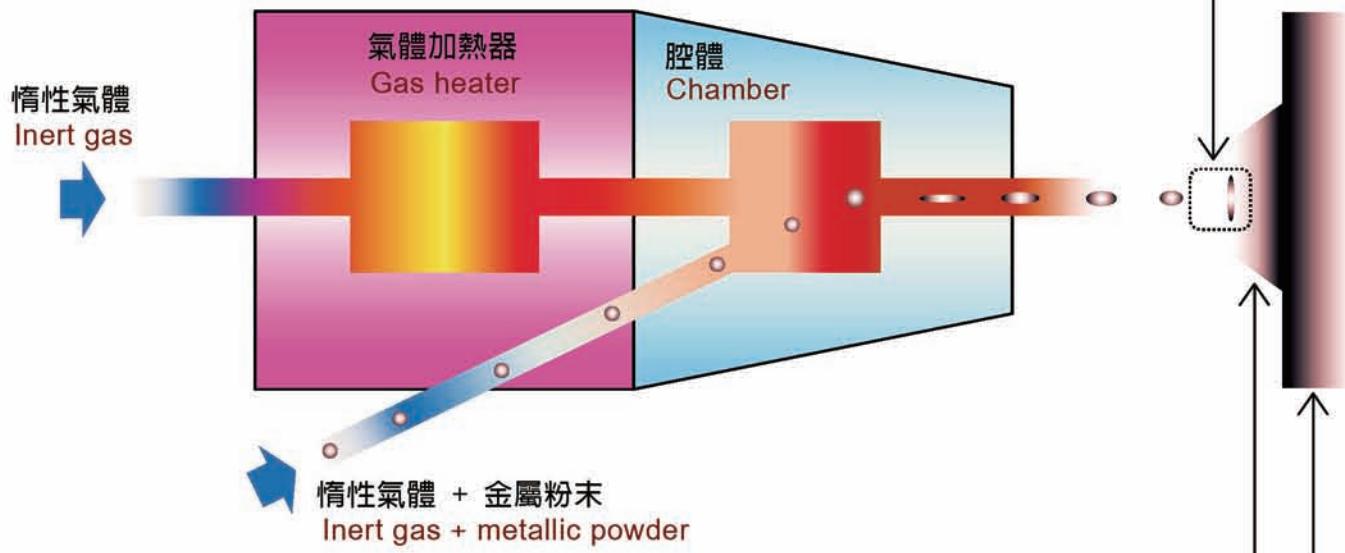
Vacuum Brazed Al-alloy and Cu

高壓冷噴塗

► 高壓冷噴塗原理 (Principle of High Pressure Cold Spray)

金屬粉末飛行動能 → 金屬粉末撞擊基材之超塑性變形 → 成膜

Kinetic energy of flying particle → Intensive plastic deformation of particle
→ Coating formation



塗層材料選擇 Choice of Coating Materials

- 純金屬 Metals : 鋁 Al, 銅 Cu, 鎳 Ni, 鈦 Ti, 銀 Ag...
- 合金 Alloys : 不鏽鋼 Stainless, 鋁合金 Al-alloy, 鎳鉻合金 Inconel...

塗層特性 Coating Properties

- 厚度 Thickness : 0.1mm ~ 20mm以上
- 高緻密 Dense、高導電 High electrical conductivity、高導熱 High thermal conductivity

基材材料選擇 Choice of Substrate Materials

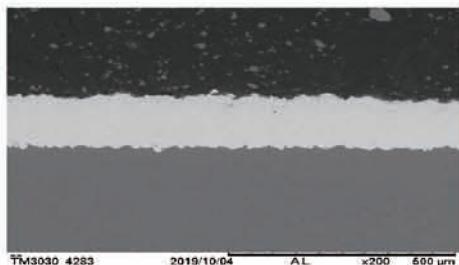
- 純金屬 Metal、合金 Alloy、陶瓷 Ceramic、高分子 Polymer

製程特性 (Process Properties)

- 全固態製程 All solid state process
- 無環境汙染 Environmental friendly
- 快速成膜 Rapid deposition
- 自動化生產，品質穩定 Automated manufacturing with stable quality

► 冷噴塗樣品 (Cold Sprayed Samples)

基材：鋁合金 (Substrate : Al-alloy)



鋁合金冷噴塗銅
Cold Sprayed Cu on Al-alloy



鋁合金冷噴塗銅
Cold Sprayed Cu on Al-alloy



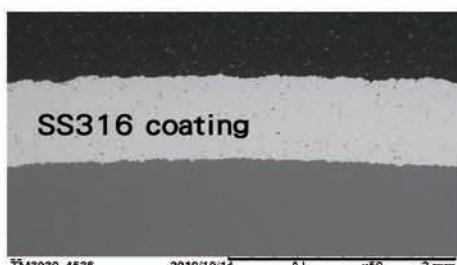
鋁陽極處理後冷噴塗銅
Cold Sprayed Cu on Anodized Al-alloy



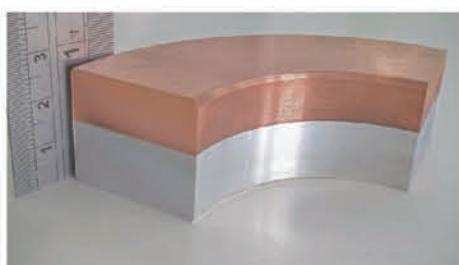
冷噴塗鈦塗層
Cold Sprayed Ti Coating



鋁合金散熱片堆銅
Cold Sprayed Cu on Al-alloy Heatsink



冷噴塗316L
Cold Sprayed 316L Coating



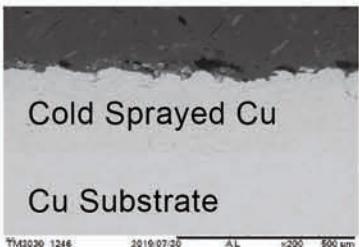
厚銅塗層(厚度>1cm)
Cold Sprayed Cu Coating with Thickness >1cm



銅/不銹鋼雙塗層
Cu / SS316L Bilayer Coating

高壓冷噴塗

基材：銅 (Substrate : Copper)



銅表面冷噴塗銅
Cold Sprayed Cu on Cu



銅輥輪尺寸修補
Dimensional Restoration
for Copper Roller



銅表面冷噴塗鋁
Cold Sprayed Al on
Cu Substrate

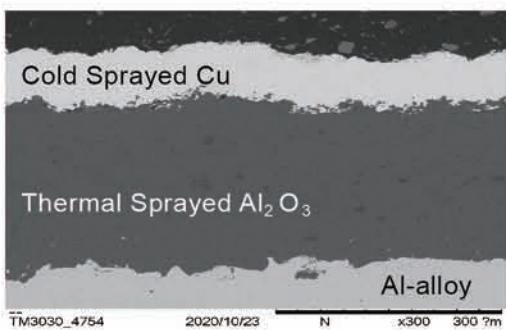
基材：鐵基/不銹鋼/陶瓷 (Substrate : Iron based / Stainless / Ceramic)



燒結陶瓷片表面冷噴塗銅
Cold Sprayed Cu on
Sintered Ceramic Plate



碳鋼表面堆積厚銅
Thick Cold Sprayed Cu Deposition
on Carbon Steel



熱噴塗氧化鋁後冷噴塗銅
Cold Sprayed Cu on Thermal Sprayed Al₂O₃



Cold Sprayed Cu
Thermal Sprayed Al₂O₃

► 產業應用 (Applications)

- 金屬零件尺寸修補
Dimensional restoration for metallic parts
- 散熱/導電元件
High thermal/electrical conductive device

- 金屬結構堆積成形
Metallic spray forming
- 生物相容性塗層
Biocompatible coating

產業實績-燃料電池與其它產業

Fuel Cell & Other industries

高溫固態氧化物燃料電池雙極板(連結板)表面必需具備高溫抗氧化性與高溫導電性，且需符合多項高規格之檢驗規範。

Antioxidant and electrical conductivity at high temperature are critical surface characteristics for bipolar plate(interconnect) of Solid Oxide Fuel Cell(SOFC). For power performance and life-time concern, many tough specifications are required within the bipolar plate coating process.

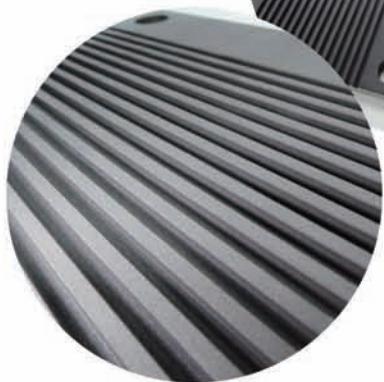
燃料電池雙極板

Bipolar Plates of Fuel Cell



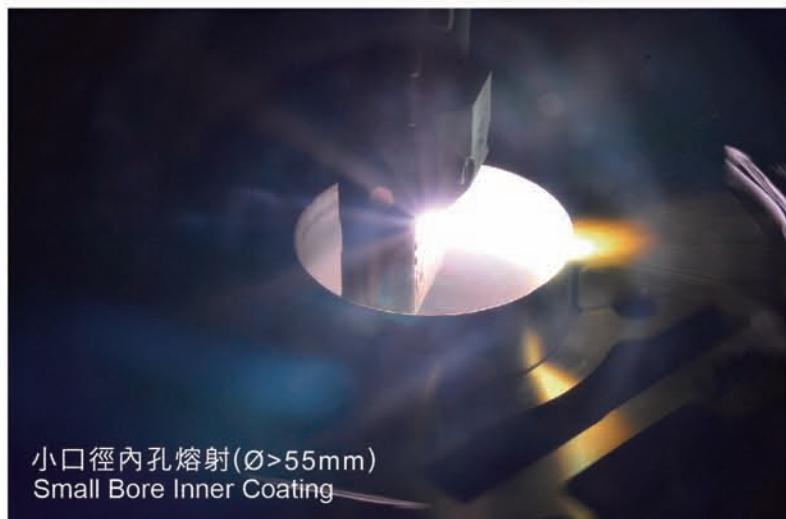
宏進專業熔射服務亦跨足其他先進製程領域，包括汽機車/電動車與航太各式零件應用，如內燃機引擎內壁之自潤塗層、閥桿、制動與傳動元件的耐磨塗層與渦輪內絕熱塗層等各種特殊材質熔射的量產服務。

Except the achievements mentioned, we also provide coating services for automotive, electric vehicle and aerospace industries. Such as self-lubricating coating for cylinder bore, wear-resistant coating for valve stem, braking and transmission system, thermal barrier coating for turbo components and mass coating production with customized coating materials.



雙極板流道

Flow Channel of Bipolar Plates



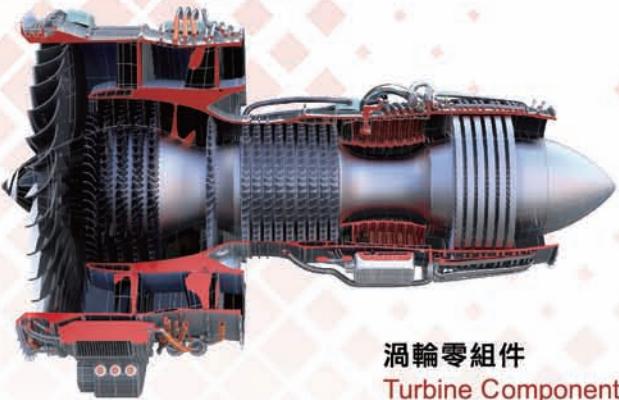
小口徑內孔熔射($\varnothing>55\text{mm}$)
Small Bore Inner Coating



渦輪增壓器
Turbo Compressor



煞車碟盤
Brake Disc



渦輪零組件
Turbine Components

產業實績-鋼鐵業

Iron and Steel Industry

I 連續鑄造工廠 C.C.Line

- 進給輥 Feed Roll
- 輪送輶輪 Table Roll
- 夾延輶 Pinch Roll
- 軸承座 Bearing Housing



I 煉焦工場 Coke Ovens

- 鬼齒 Crusher
- 受齒 Grizzly Bar
- 高爐羽口 tuyeres of Blast Furnace

續料台車導板輶
Guide Roll for Material Trolley

I 鋼板熱壓工場 Hot Mill Line

- 粗壓輸送輶 Rough Mill Table Roll
- 精壓輸送輶 Hot-Run Table Roll
- 夾延輶 Pinch Roll
- 捲取輶 Wrapper Roll
- 側整輶 Side Guide Roll
- 張力輶 Looper Roll
- 軸封端版 Seal End Plate
- 軸承座 Chock

I 線材、棒材工場 Rod Mill

- 導引輶 Guide Roll
- 夾延輶 Pinch Roll
- 抽線胴 Capstan Roll

I 連續退火線 CAL

- 爐輶 Hearth Roll
- 軸承座 Bearing Housing



鼓風機葉輪
Turbine Wheel of Blower



張力輶
Bridle Roll



托輶
Cradle Roll



捲取輶
Wrapper Roll

水冷輶
Water Cool Rolls

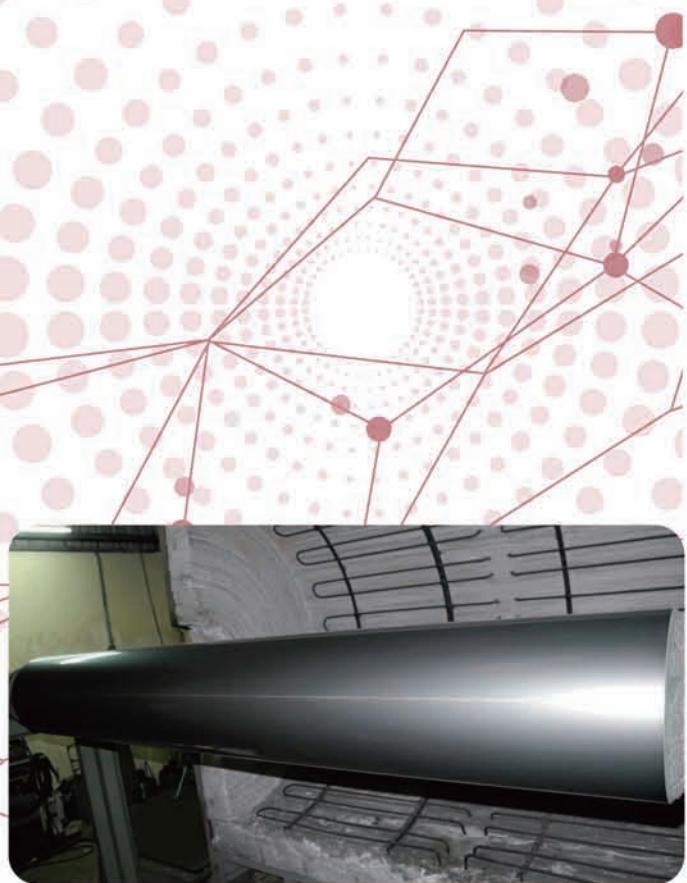
爐輶
Hearth Roll

I 熱浸鍍鋅工廠 Continuous Galvanizing Line (CGL)

- 沈浸輶 Sink Roll
- 支撐輶 Support Roll
- 軸套 Sleeve of Sink Roll
- 襯套 Metal of Support Roll
- 十字軸 Driver
- 張力輶 Bridle Roll
- 轉向輶 Deflector Roll
- 接觸輶 Touch Roll
- 爐輶 Hearth Roll



沈浸輶
Sink Roll



穩定輶
Support Roll

產業實績-鋼鐵業



張力輶
Tension Roll



活塞
Piston Rod



氣風刀
Air Sealing



膨脹片
Expansion Sheet



十字軸
Driver



各類軸襯套
Sleeves and Bushes



輻射管
Radiant Tube



油封環
Oil Seal Ring

產業實績-造紙業

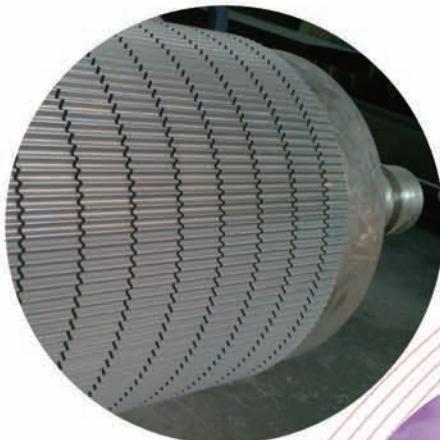
Paper Making Industry

造紙產業應用實績，主要訴求在耐磨耗、耐腐蝕。

實績應用包含瓦楞輥、複捲輥、導紙輥、抽吸伏輥、段輥、網輥...等。

Surface characteristics of wear and corrosion resistances are mostly required in paper making industry.

Our achievements of coating include corrugated roll, rewinding reel, guiding reel, suction couch roller and wire roll... etc.



瓦楞輥
Corrugating Roll



塗佈輥
Gate Roll Coater



網輥
Wire Reel



捲胴輥
Torso Reel



複捲輥
Rewinding Reel



複捲輥
Rewinding Reel

產業實績-石化業

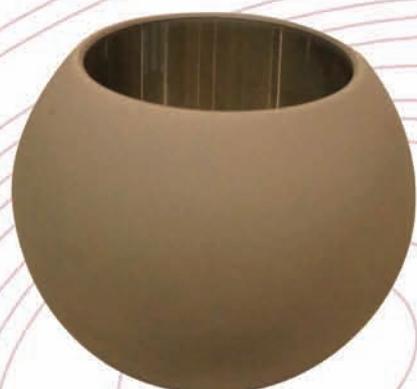
Petrochemical Industry

石化產業應用實績，主要訴求在耐磨耗、耐腐蝕、絕熱。

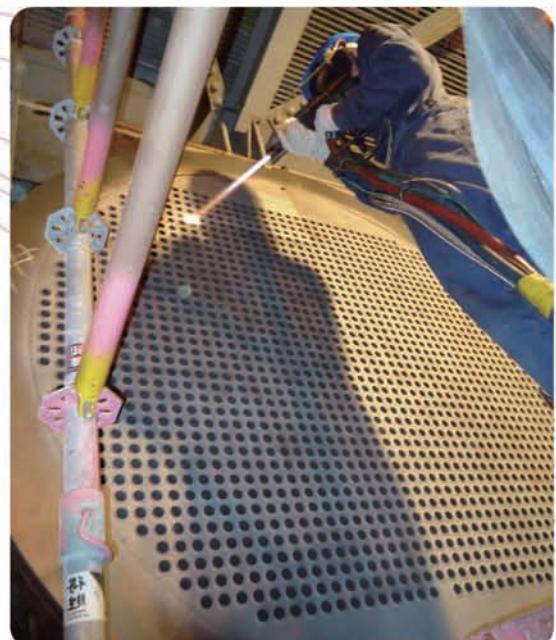
實績應用包含高壓活塞桿、油壓缸軸心、迴轉閥噴焊整修、鼓風機轉子、汽渦輪機轉子、瓦斯噴嘴、球閥...等。



活塞桿
Piston Rod



球閥
Ball Valve



熱交換器管板
現場施工
Heat Exchanger Coating
(Onsite Service)



迴轉閥
Rotation Valve



端蓋
合金噴桿
End Cover Coating

Surface characteristics of wear ,corrosion resistances and thermal barrier are mostly required in petrochemical industry.

Our achievements of coating include repairing with high-pressure piston rods, shafts for hydraulic cylinders, rotation valves, rotors of blowers, rotors of gas turbines, gas nozzles and ball valves...etc.



蒸氣頸襯套
Sleeve of Steam Tube



焦油蒸發器桶槽噴焊
Tank spray coating



離心機螺桿
Screw of Centrifuge



壓縮機汽缸內壁(修復前)
Cylinder Inner Surface (Before Repairing)

壓縮機汽缸內壁(修復後)
Cylinder Inner Surface (Repaired)

產業實績-汽電業

Combined Heat and Power (CHP) Industry

汽電業主要訴求為高溫抗腐蝕，耐沖蝕，耐磨耗，耐氣蝕。

實績應用包含燃煤系統鍋爐水管牆、入口管集(DUCT ECO)、垃圾焚化爐管、流體化床爐管、磨煤機偏心軸、磨煤輪 / 磨煤盤、引風機葉片(IDF)、等...

Surface characteristics of high-temperature corrosion resistance, erosion resistance, wear resistance and cavitation resistance are mostly required in power plant industry.

Our achievements of coating include walls of boilers, tubes in coal-fired system, arrival manifold (DUCT ECO), tubes in refuse incineration plant, tubes in fluidized bed, eccentric shaft of coal mill, coal mill roller and plates, induced draft fans (IDF)...etc.



偏心軸軸心修復
Repair for Eccentric Shafts



抗沖蝕合金螺絲
Erosion-resist Screw



焚化爐管排
Tubes of Refuse Incineration Plant



磨盤
Milling Disk



水管牆廠外施工
Tube Wall (Onsite Service)



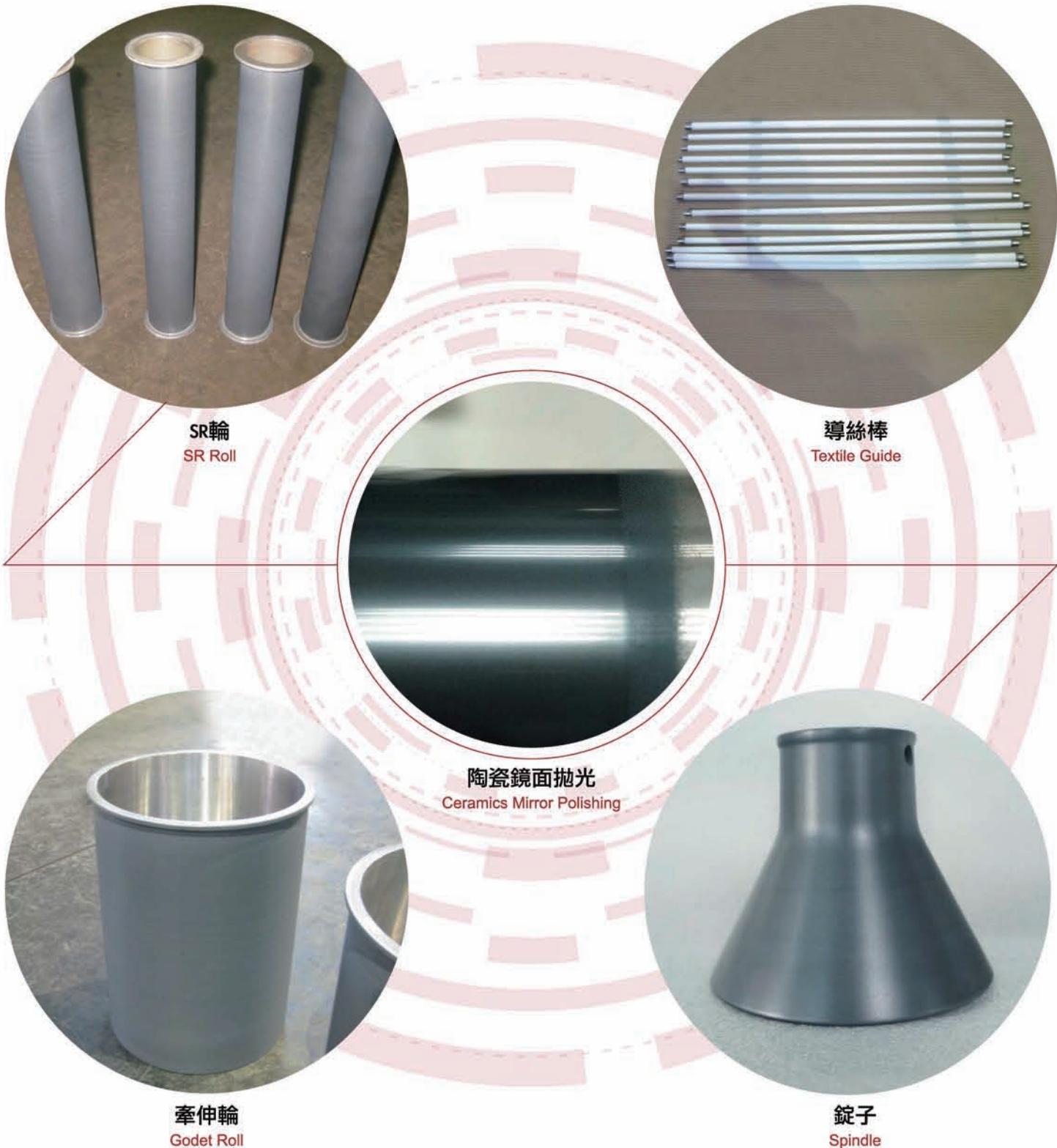
磨輪
Grinding Wheel

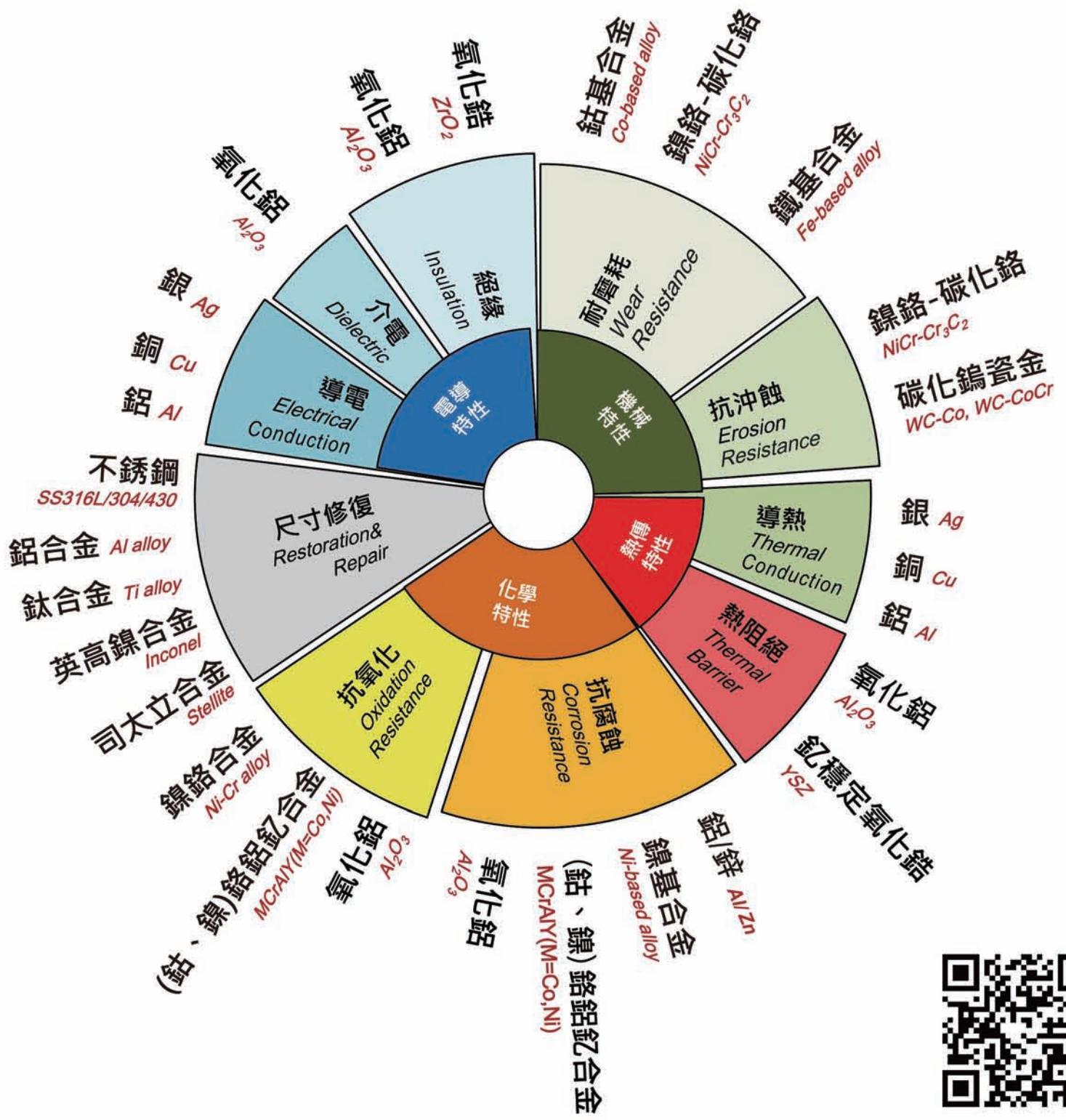
產業實績-紡織化纖業

Textile Industry

紡織產業應用實績，主要訴求在耐磨耗、耐腐蝕，且對於塗層表面粗度要求較高。
實績應用包含牽伸輪、油輪、SR輪、導絲板、導絲棒...等。

Surface characteristics of wear ,corrosion resistances and roughness are mostly required in textile industry.
Our achievements of coating include godet roll, SR roller, textile guide plate and rob...etc.





Plus
Metal Tech

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