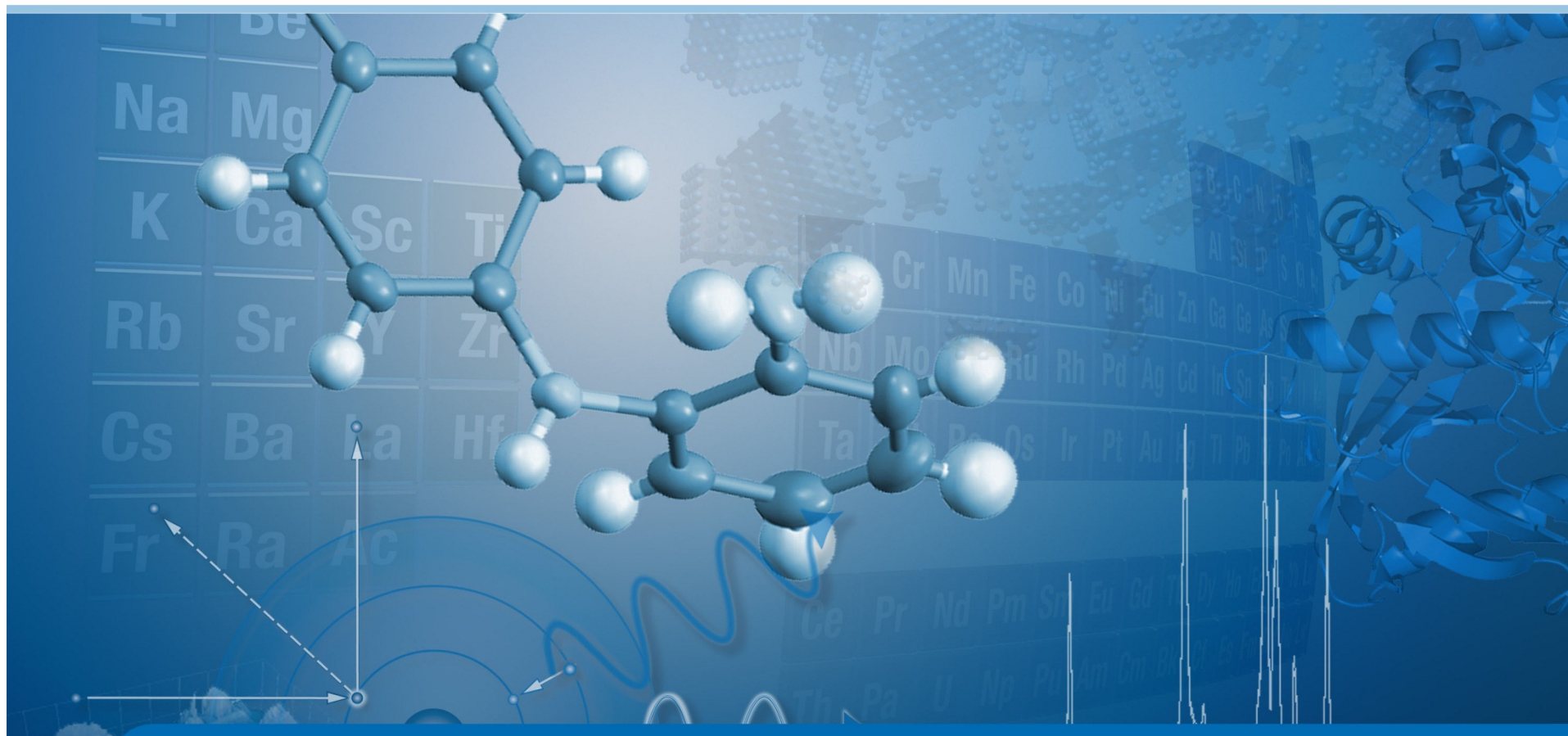




Bruker Coating Solution

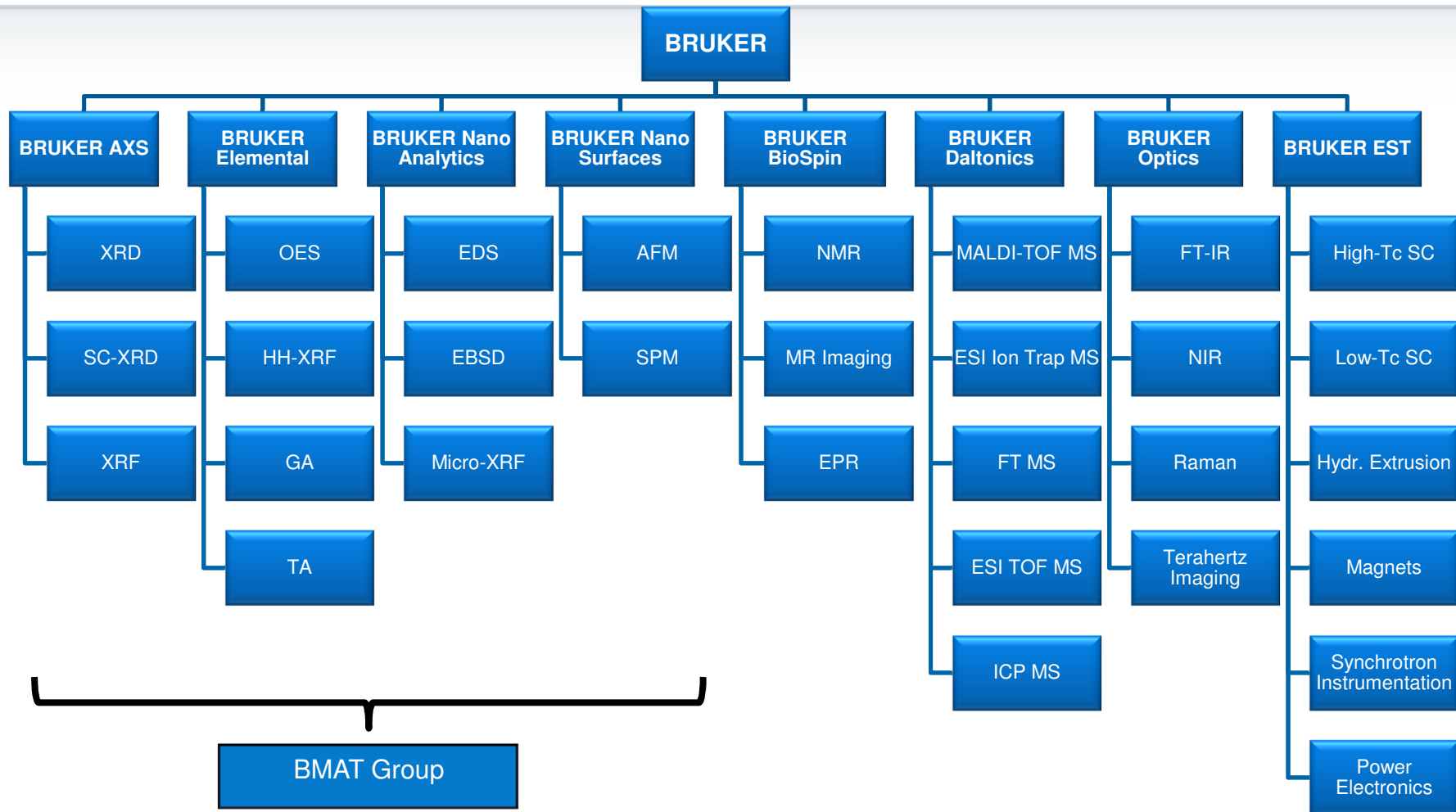


Bruker Corporation



- Bruker Corporation is one of the **worldwide "top ten"** analytical instruments companies with \$ 1.3 Billion 2011 revenue
- Bruker Corporation is listed at the **NASDAQ (BRKR)**
- More than **5400 employees** worldwide
- Bruker was **founded 1960** in Karlsruhe, Germany
- **Headquarters:** Boston (USA), Karlsruhe (D)
- The major Bruker **R&D and production facilities:**
 - Germany: Karlsruhe (4x), Bremen, Leipzig, Berlin, Kalkar
 - France: Wissembourg
 - Switzerland: Zürich
 - United States: Boston, Madison, Santa Barbara, Tucson, Kennewick
 - Japan: Yokohama
 - Belgium: Kontich

Bruker Corporation Groups and Divisions



德國布魯克AXS公司



- 1895年倫琴博士發現X射線
- 1895年西門子開始生產X光管
- 1920年西門子開始X射線分析儀器研發及生產
- 1997年10月西門子AXS公司 → 布魯克AXS公司
- 2001年併購荷蘭 Nonius 公司 (SCD)
- 2002年併購日本 MAC Science 公司 (XRD)
- 2006年併購德國 Quantron公司 (Spark OES)
- 2006年併購德國 Roentec AG公司 (EDS & μ XRF)
- 2006年併購美國 KeyMaster公司 (Hand Held XRF)
- 2008年併購德國 Juwe公司 (Gas Analyzer)
- 2008年併購德國 Surface Imaging System公司 (AFM)
- 2010年併購美國 Varian公司 ICP-MS、Lab GC、GC/MS/MS產品線
- 2010年併購美國 Veeco公司 AFM and OIM產品線
- 2011年併購美國 CETR公司 (Mechanical & Tribological Tester)
- 2012年併購德國 Hecus MICROcaliX(R) SAXS產品線
- 2012年併購比利時 SKYSCAN 公司(Micro CT)

Bruker AXS

Product Lines



- **X-ray Fluorescence Spectrometry (XRF)**
Non destructive determination of the elemental composition of solids and liquids
- **Optical Emission Spectroscopy (OES)**
Elemental analysis of metals
- **Gas Analysis (GA)**
ONH and CS analysis, specific surface area determination
- **X-ray Microanalysis (MA)**
Elemental analysis for electron microscopes
- **Atomic Force Microscopy (AFM)**
Surface characterization with sub-nanometer resolution
- **X-ray Diffraction (XRD)**
Structure, material properties and phase analysis of solid and liquid polycrystalline material
- **Single Crystal X-ray Diffraction (SC-XRD)**
Determination of the 3D structure of crystalline chemical and biological compounds
- **Micro Computed Tomography (μ -CT)**
Three dimensional (3D) imaging of the internal microstructure of objects in a non-destructive, non-invasive way using μ -CT

Diffraction Solutions Product Line



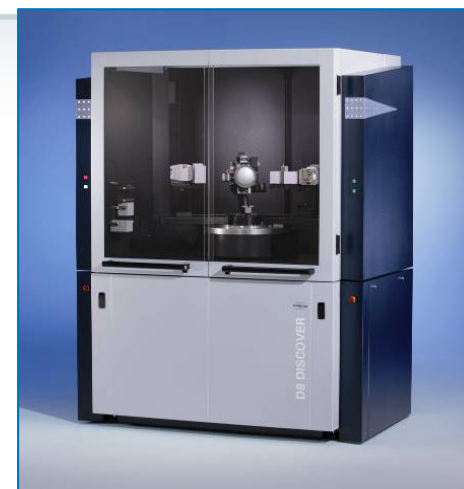
D8 ADVANCE



New D8 ADVANCE



D8 DISCOVER



New D8 DISCOVER



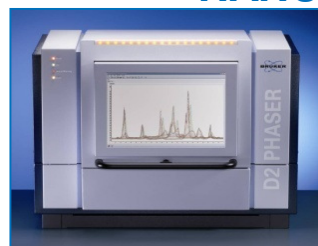
D4 ENDEAVOR



NANOSTAR



MICROCalix



D2 PHASER



D2 CRYSO



D8 FABLINE

X-ray Fluorescence (XRF) Product Line



S8 TIGER



S8 LION



S8 DRAGON



S1 TITAN



S2 PICOFOX



M1 ORA



M1 MISTRAL



M4 TORNADO

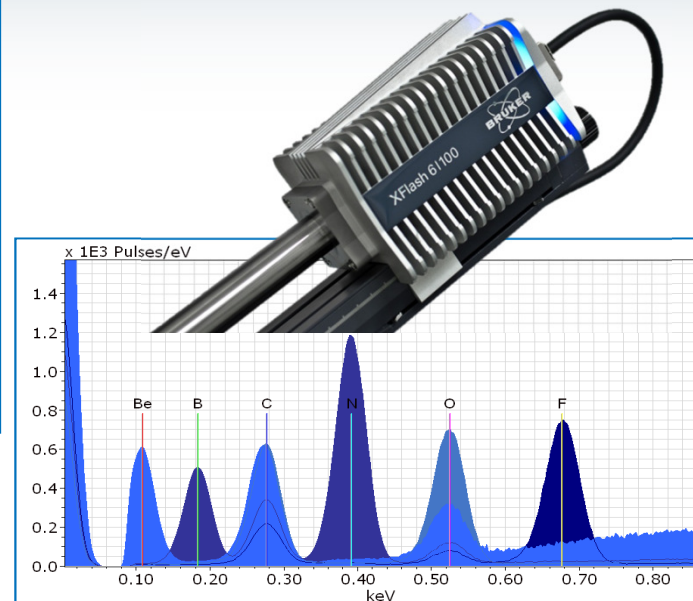
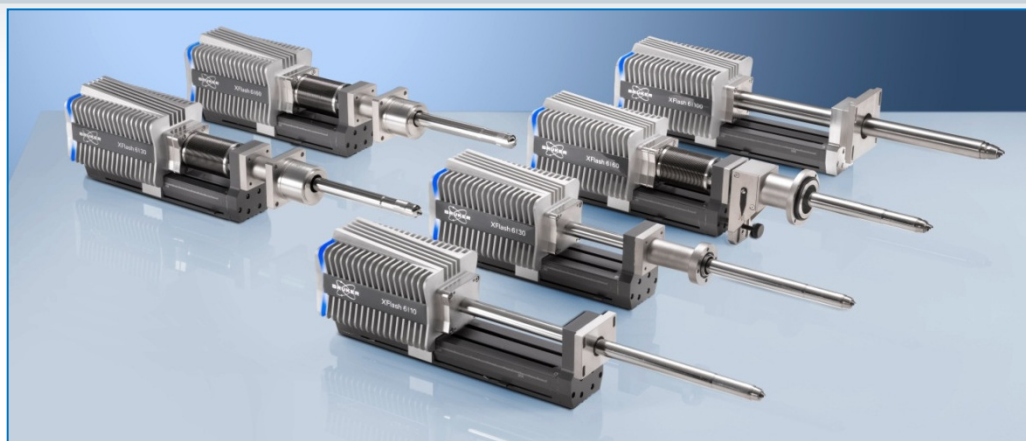


ARTAX



S2 RANGER

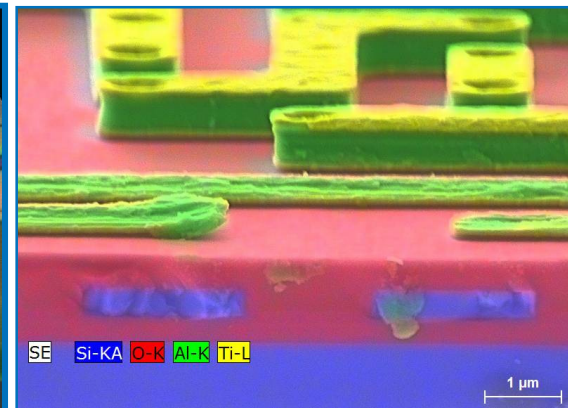
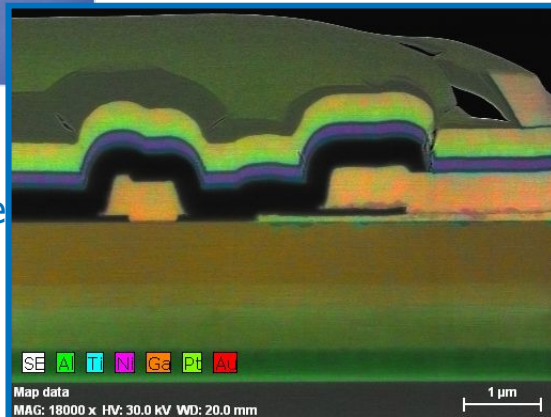
X-ray Microanalysis (MA) Element Analysis for Electron Microscopes



EBSD

XFlash® 6 Family

- 6 | 10 121, 123, 126, 129eV
- 6 | 30 123, 126, 129eV
- 6 | 60 126, 129eV
- 6 | 100 129eV



Atomic Force Microscopy (AFM) & Optical Profiler Product Line



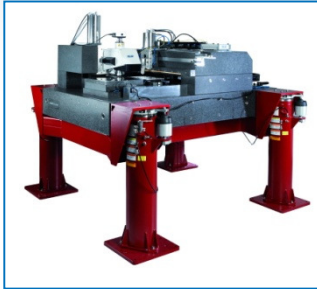
N8 NANOS



N8 NEOS



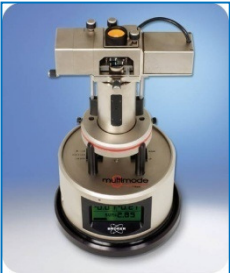
N8 ARGOS



N8 TITANOS



N8 RADOS



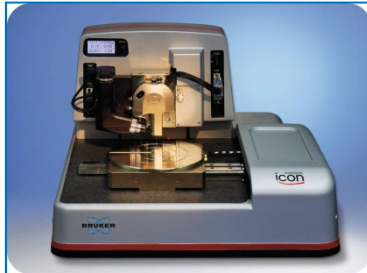
MultiMode 8



IRIS



BioScope Catalyst



Dimension Icon



Innova



Dimension Edge



Dimension X



Dimension

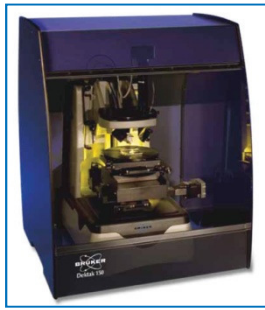


InSight 3D

Optical Profiler



ContourGT™



Dektak

應用範圍



- 測試元素的含量或鍍層的厚度, 可分析的元素範圍從原子數22(Ti)至92(U)
- 進行元素成分分析時, 儀器可同步分析28種不同元素的含量
- 可同時分析4種度層(基材及3種度層)含常規元素的修正功能
- 由ISO3497, ASTM B568和DIN 50987所認證的進行度層厚度的測試方法

鉻 Hard Chromium Plating



- Excellent wear resistance
- Good corrosion resistance
- Good hardness
- Good abrasion resistance
- Good heat resistance
- Improvement of life and performance of parts
- Restoring dimensions of undersized parts
- Applications
 - Piston rings
 - Shock absorber rods and struts
 - Hydraulic shafts
 - Various types of tools
 - Plug gages
 - Crankshafts
 - Printing plates



鉻 Decorative Chromium Plating



- Hexavalent & Trivalent
- Good decorative surface finish
- Good corrosion protection
- Applications
 - Automotive parts
 - Golf clubs
 - Door handles
 - Hinges
 - Faucets
 - Plumbing fixture



鎳 Nickel/Electroless Nickel Plating



- Protective-decorative coating
- Good corrosion resistance
- Good wear resistance
- Good uniformity
- Solder-ability
- Low labor costs
- Applications
 - Tools
 - Fasteners
 - Hard drives
 - Electronics components
 - Plumbing fixtures
 - Hardware
 - Heat sinks
 - Fuel injectors
 - Ball studs
 - Shafts



- Pins
- Gears
- Manifolds
- Pipes
- Hose couplings
- Bearings
- Valves
- Piston heads
- Blades



鋅 Zinc Plating



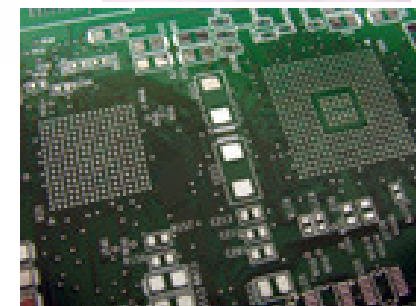
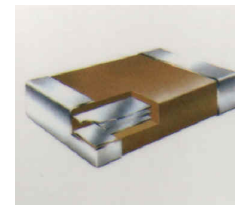
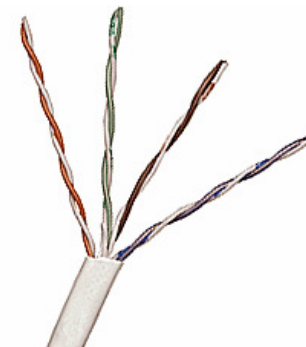
- Good atmospheric corrosion resistance
- Inexpensive
- Supplementary coatings needed
- Poor chemical resistance
- Toxic
- Applications
 - Screws
 - Nuts
 - Bolts
 - Washers
 - Automobile ashtrays
 - Outlet boxes
 - Rivets
 - Conduit tubing
 - Pipe fittings and couplings



錫 Tin Plating



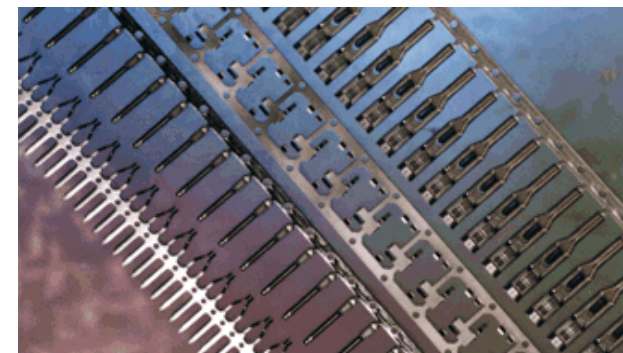
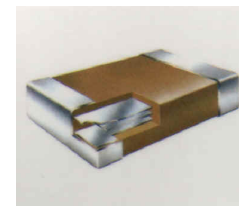
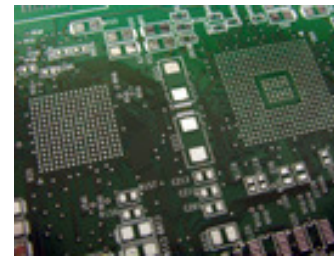
- Good corrosion-tarnish resistance
- Good solder-ability
- Good chemical resistance
- Non-toxic
- Applications
 - Food preservation containers
 - Bearings
 - Lead frames
 - Wires
 - Connectors
 - PCBs
 - Capacitors/resistors



錫鉛 Tin-Lead Plating



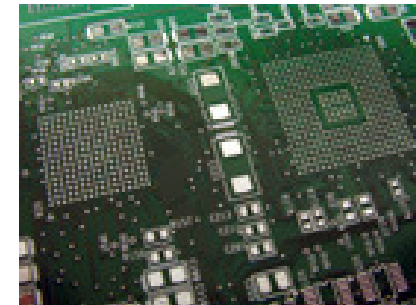
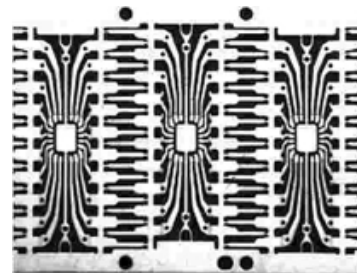
- Excellent corrosion resistance
- Good etch resistance
- Good solder-ability
- Toxic because of lead
- Will be replaced by Sn, SnBi, SnAg, SnCu, SnAgCu coating soon
- Applications
 - Bearings
 - Barrels
 - PCBs
 - Lead frames
 - Capacitors/resistors



銀 Silver Plating



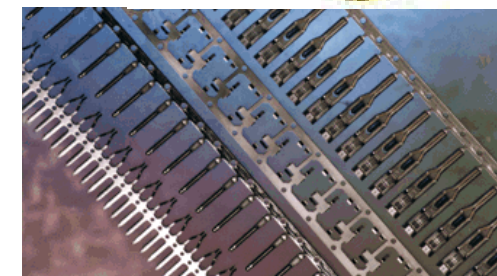
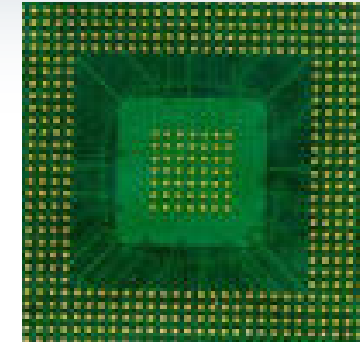
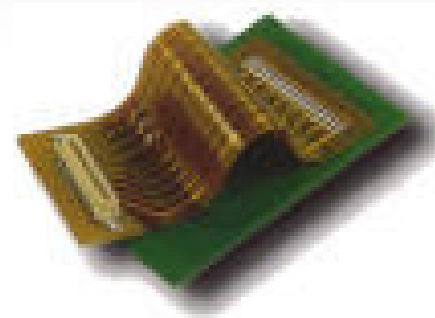
- Good corrosion resistance
- Good chemical resistance
- Good electrical conductivity
- Good decorative appearance
- Non-toxic
- Applications
 - Tableware
 - Flatware
 - Chemical storage container
 - PCBs
 - Connectors
 - Wires
 - Capacitors/resistors
 - Jewelry



金 Gold Plating



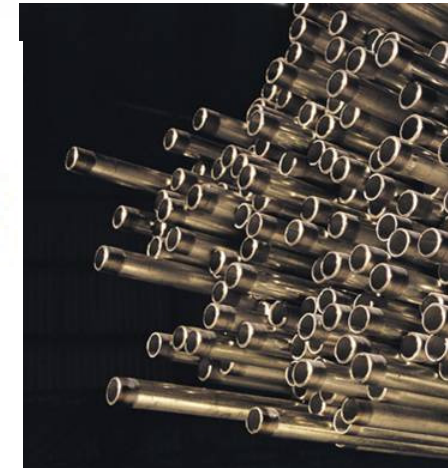
- Good corrosion resistance
- Good wear resistance
- Good solder-ability
- Good weld-ability
- Low porosity
- Low electrical contact resistance
- Good decorative appearance
- Applications
 - Jewelry
 - PCBs
 - Connectors
 - Wires
 - Lead frames



銅 Copper Plating



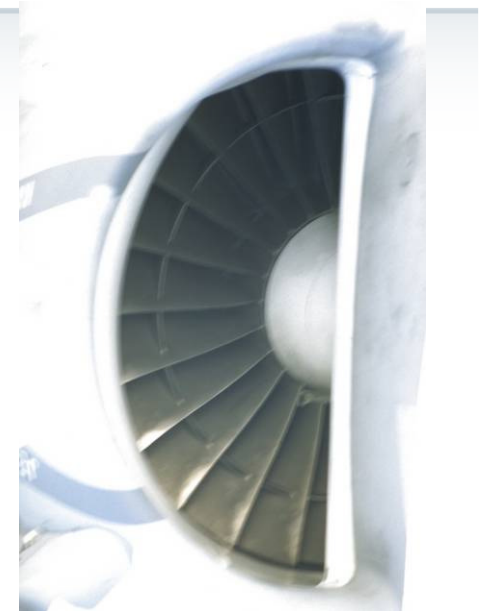
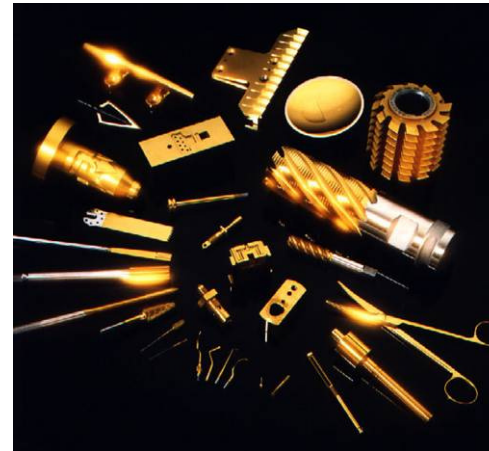
- Good stop-offs for heat transfer
- Fair corrosion-resistance
- Underplates in multi-layer plating
- Applications
 - PCBs
 - Plumbing fixtures
 - Pipes, valves and fittings
 - Connectors
 - Wires
 - Lead frames



鈦 Titanium Coatings



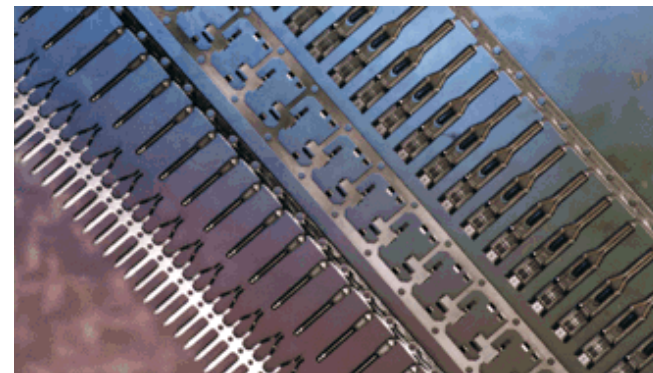
- Good corrosion resistance
- Good wear resistance
- Decreased friction coefficient
- Improved cutting characteristics
- Increased tool life
- Applications
 - Cutting tools
 - Aerospace components
 - Medical devices
 - Blades, slitters and knives
 - Shafts and seals
 - Sliding and rotating components
 - Eyeglass frames
 - Punches and dies
 - Automotive parts

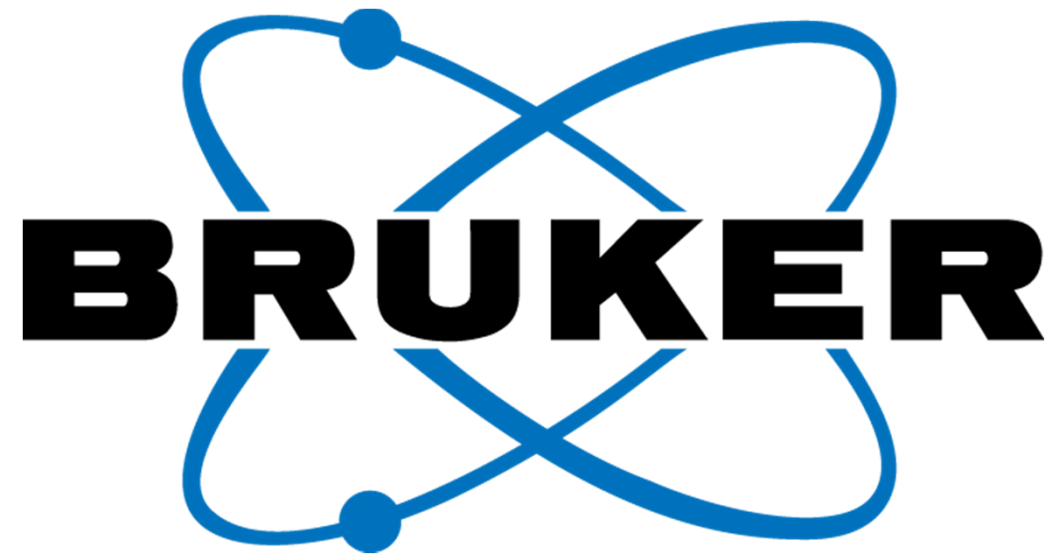


白金 Platinum Group Plating



- Ir, Pt, Rh, Pd, Ru
- Good corrosion resistance at high temperature
- Low diffusion coefficient
- Improved life
- Decorative surface finish
- Low electrical resistivity
- High hardness





Innovation with Integrity