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# 동광테크

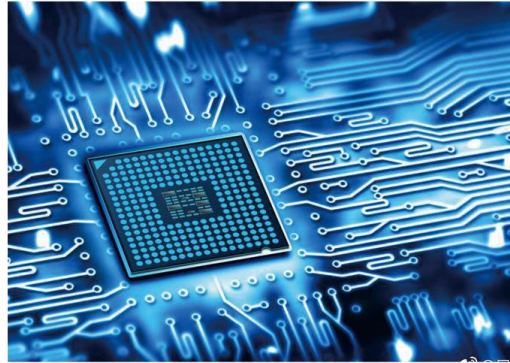
(DONGKWANG TECH)

## TARGET 소개자료

# 1. Product Application



Semiconductor display  
(TFT, OLED)



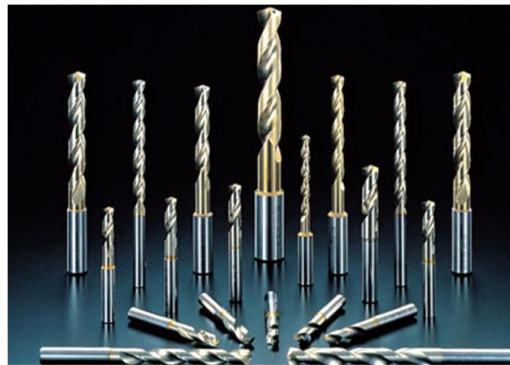
Semiconductor chip



Solar power



LOW-E glass



Decoration Tools



Computer hard drives

## 2. Equipment & Capacity

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### Production capacity:

1. ITO targets production capacity 120t / year, and plan to expand to 400t / year gradually .
2. Mo target: Rotary Mo target 500pcs / year, planar Mo target 700pcs / year
3. Cu target: Rotary Cu target 1500pcs / year, planar Cu target 25000pcs / year
4. Al target: Rotary Al target 1500pcs / year, planar Al target 5000pcs / year
5. Other types of metal targets: 1000 tons / year

**Main equipments** : Ten thousand ton isostatic press, ultra high temperature sintering furnace, vacuum melting furnace, forging, rolling, heat treatment, precision machining, 5m large ultrasonic C-SCAN testing, precision chemical composition and metallographic examination, Experimental sputter coating machine, super clean room.

### 3. Products and customers

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Application	Target material	Application area
Semiconductor display (TFT,OLED)	High purity Al, Cu, Mo,Ti, (ITO)	HDTV, OLED, laptop, mobile phone
Semiconductor chip	Ultra high purity Al, Cu, Mo, Ni, etc.	Key materials for making integrated circuits
Solar PV	Zinc oxide aluminum, Cr, CuNi, NbOx, etc	Thin film solar cell
LOW-E glass	Zinc oxide aluminum, SiAl, ZnAl, NbOx, etc	Reduce UV rays, heat insulation
Decoration Tools	Cr, TiAl, Ti, Ni, Si, etc	Wear resistance/wear reduction/ corrosion resistance/decoration
Optical, Optical storage	Si, Nb, Al, Ti, Ta, etc	Optical lens, computer hard disk

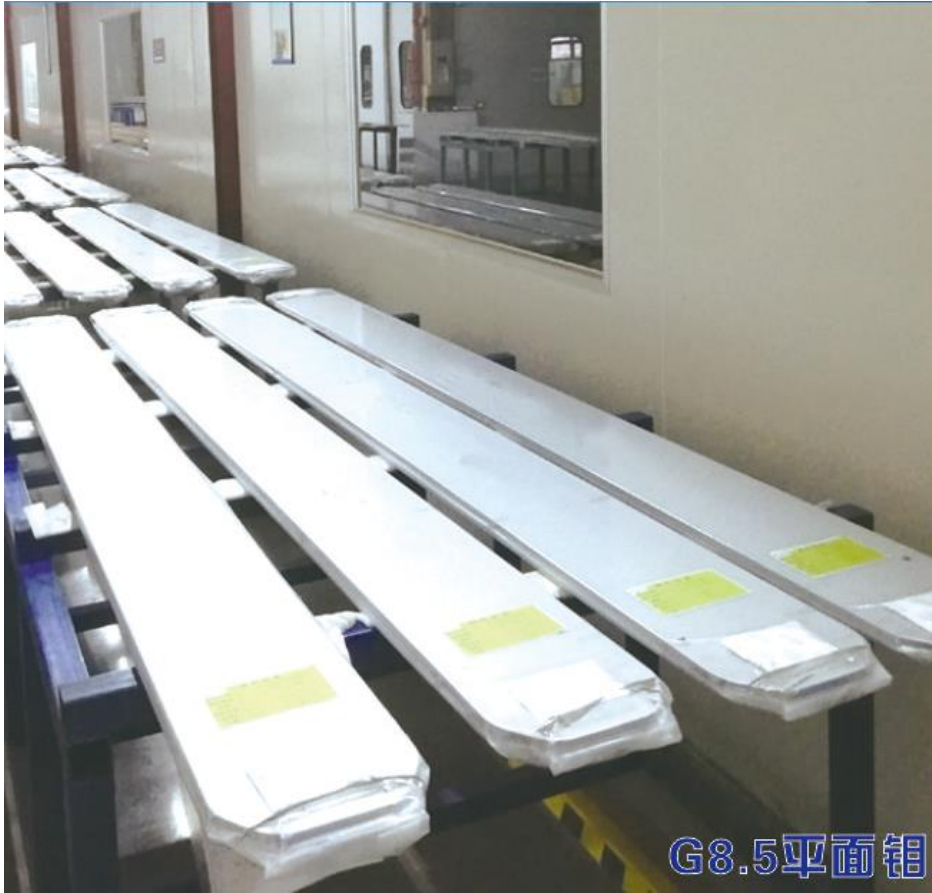
## 4. Semiconductor display(TFT, OLED) target(1)

- High Generation: G11,G10.5,G10,G8.5...G5,TFT,OLED Target
- Size: Length up to 4000mm
- Suit for: AMAT,ULVAC coating systems

Product	Purity	Planar target	Rotary target
Mo	3N5	Whole piece G5,G6,G8.5,G10.5/G11	Whole piece G5,G6,G8.5,G10.5/G11
Al	5N		
Cu	4N		
Ti	2N8		
ITO	4N	Multi-pcs construction. Single pc up to 1000mm G5,G6,G8.5,G10.5/G11	Bonding with multi-sections. Single pc up to 400mm, G5,G6,G8.5,G10.5/G11

## 4. Semiconductor display(TFT, OLED) target(2)

### Planar Mo & Rotary Mo



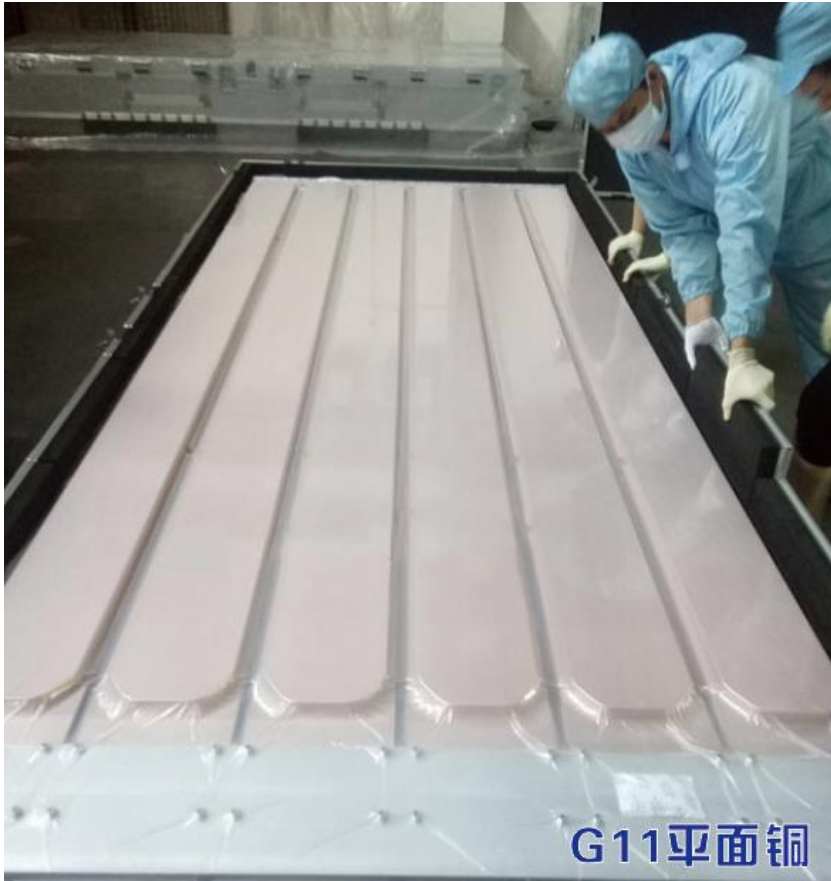
## 4. Semiconductor display(TFT, OLED) target(3)

### Planar Al & Rotary Al



## 4. Semiconductor display(TFT, OLED) target(4)

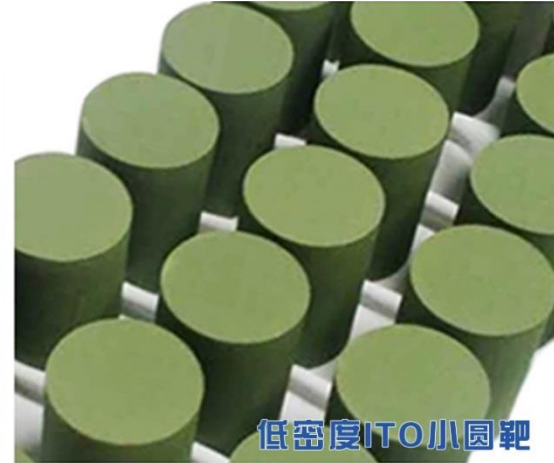
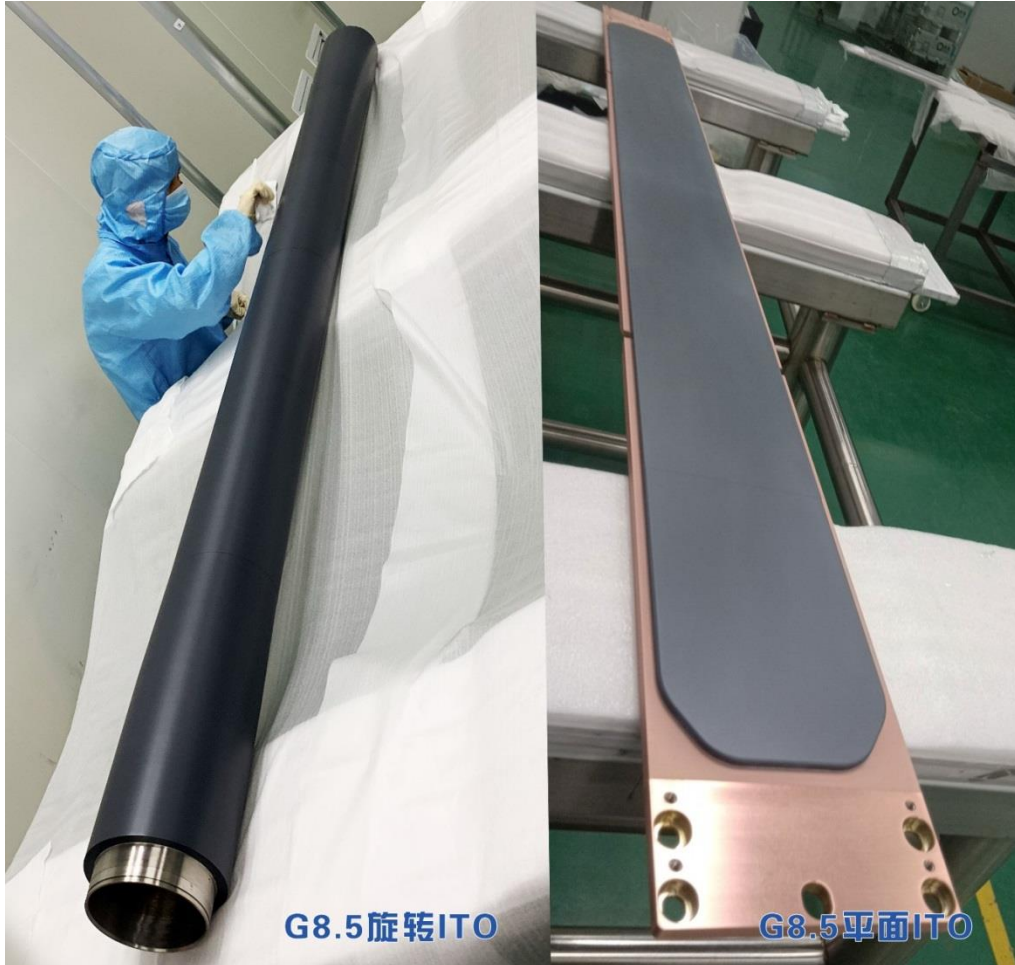
### Planar Cu & Rotary Cu





## 4. Semiconductor display(TFT, OLED) target(5)

### ITO Target



# 5. Touch Panel Targets(1)



Phone



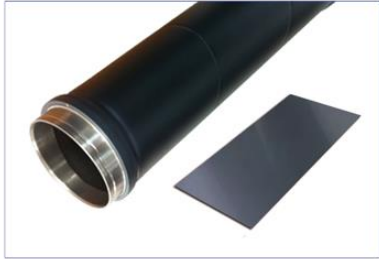
Ipad



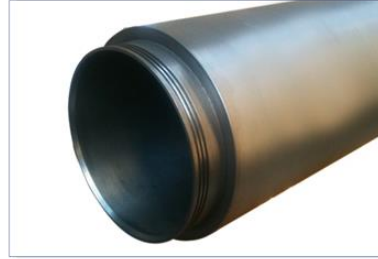
Notebook

Product	Target material	Target size
Capacitive/Resistive Touch Panel targets	MoX, AlX ,Si, NbOx, ITO etc	G5,G8.5,G10,G10.5,G11, length up to 4000mm
ITO conductive glass targets	Si, NbOx, ITO	
ITO conductive film targets	Si, NbOx, ITO	

# 5. Touch Panel Targets(2)



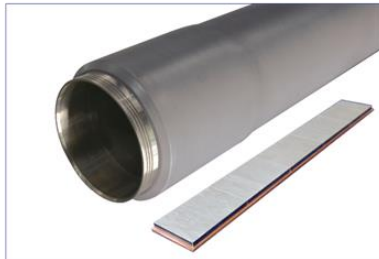
ITO



Monolithic Rotary Mo/MoX



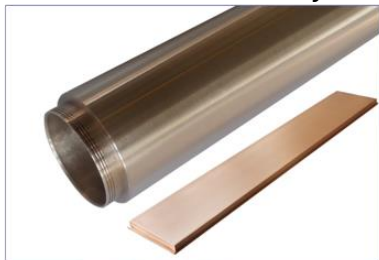
MoX, Single pc length up to 1500mm



Planar Si  
& Monolithic Rotary Si



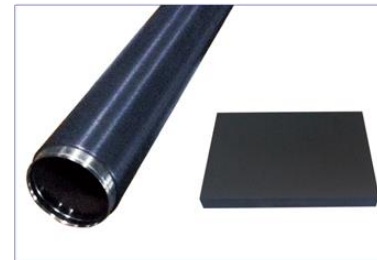
Monolithic Rotary Al/AlX



Cu/CuNi



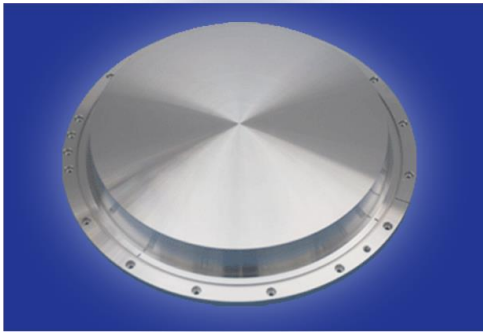
Nb



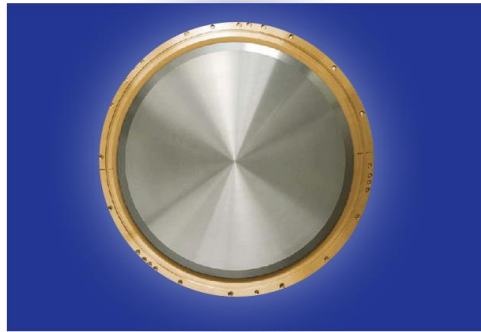
NbOx

# 6. Electronics& Semiconductors Targets(1)

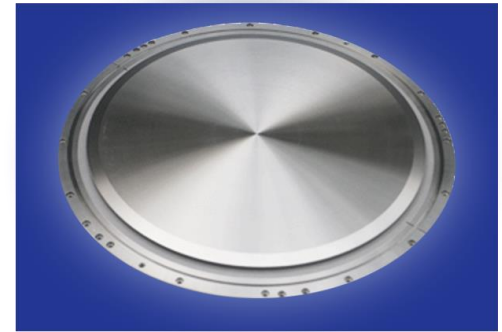
Semiconductor target



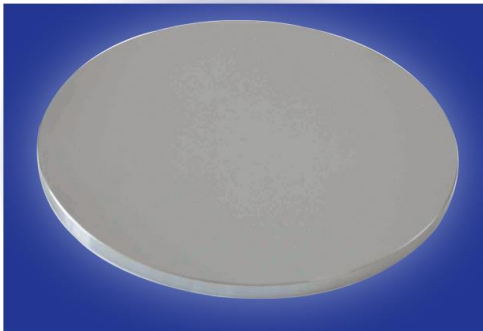
High purity Al



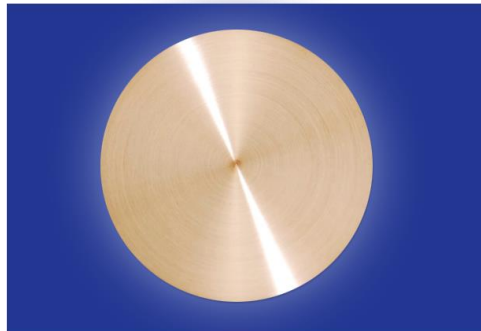
High purity Ta



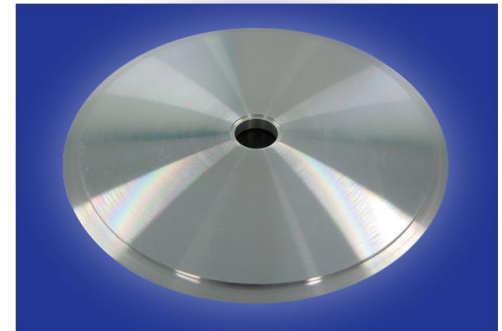
High purity Ti



High purity Wti



High purity Cu



High purity Ni

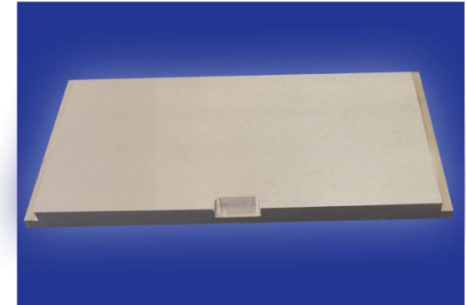
## 6. Electronics& Semiconductors Targets(2)

Targets for resistor and capacitor

NiCr 80/20,70/30,60/40,50/50

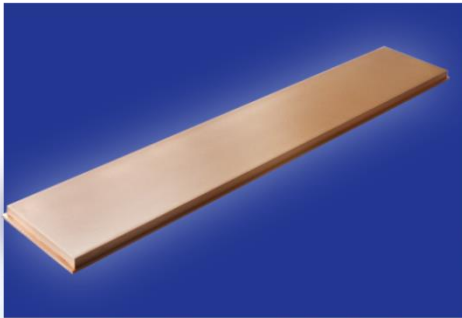
NiCrSi

SiCr

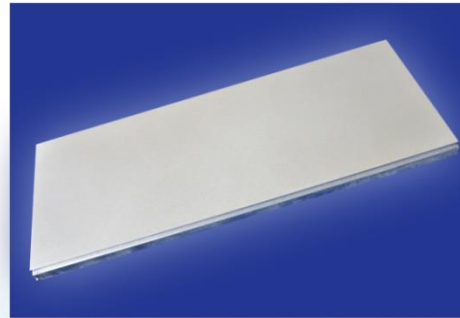


NiCr alloy target

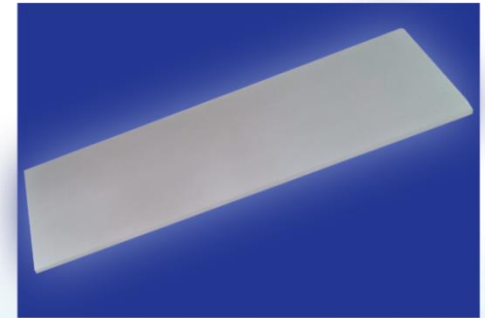
Targets for PCB/NCVM/EMI



Cu



Al



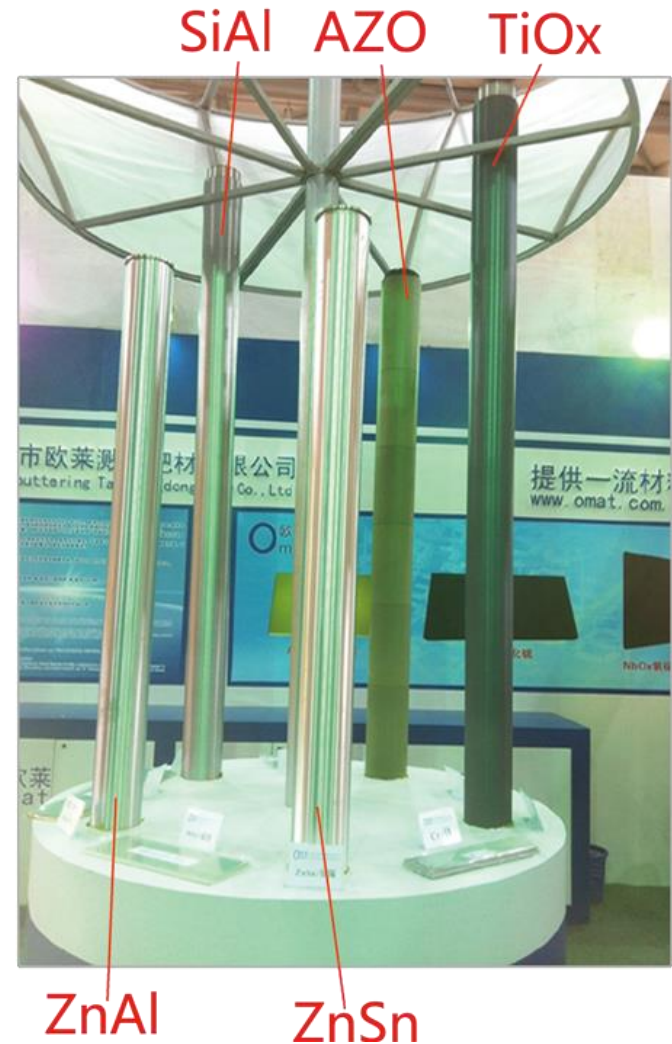
Ti

## 7. Architectural and automotive glass, web coating targets(1)

As a major long-term supplier to this industry, produces a wide range of targets compatible for using in common coating system e.g. VON ARDENNE, LEYBOLD, BOC AIRCO, AMAT etc., and other coating system designed by customer themselves.

Rotary target			Planar target			Target size
SiAl	ZnAl	TiOx	Cr	Ti	NiCr	Length up to 4000mm Base on drawing
NiCr	ZnSn	NbOx	Sn	Cu	SS	
Ti	Cr	ZnSnSb	Si	NbOx		
Sn	Nb	AZO	AZO			

## 7. Architectural and automotive glass, web coating targets(2)



# 8. Decoration and tool & die targets(1)

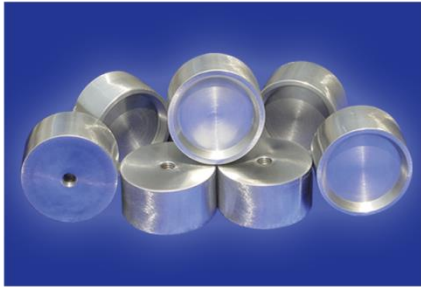
- Decorative coatings: We offers a wide range of sputter targets which, as coatings, provide gold, silver, black and rainbow color simulation on such items as watches, glasses, pens, art-work and domestic fittings.
- Hard Coatings: For cutting tools where friction reduction, hard-wearing surfaces and corrosion resistance are required. We offers total coating solutions with its range of sputter targets.
- Adopted by the hot isostatic pressing (HIP), vacuum melting or spraying process, which provides an average grain size of typically <50um
- **Available target list:**

Cr	AlTi	AlCr	TiAl	Ti
Zr	Ni	W	SS	Graphite
Si	InSn	NbOx	Nitride	Boride

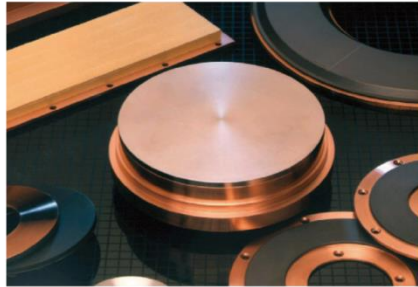
These are principally available in disc (60/65/100mm20/30/40/45mm, rotary and planar target)



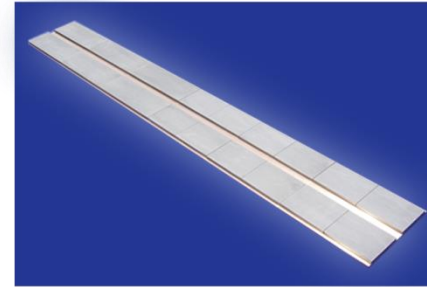
## 8. Decoration and tool & die targets(2)



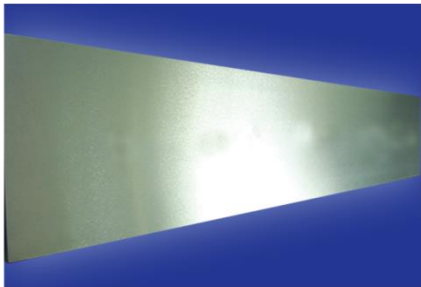
Cr/AlCr/Ti/TiAl/Zr/



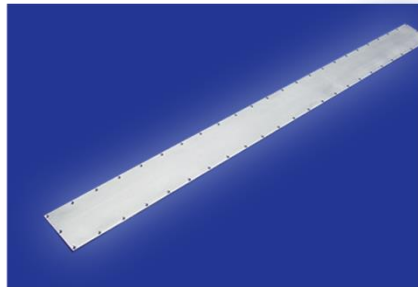
Graphite



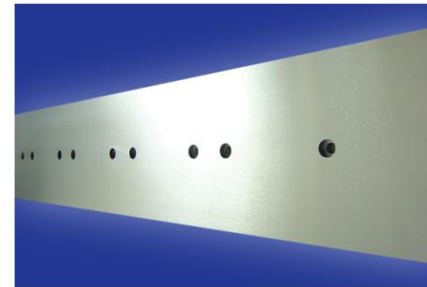
Si



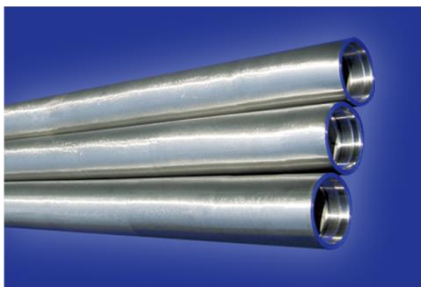
Planar TiAl



Planar Cr, length 2000mm



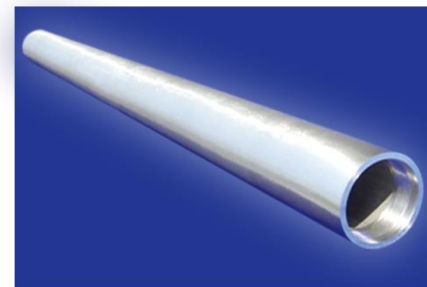
Planar AlCr, length 2000mm



Ni



Cr



Ti/TiAl

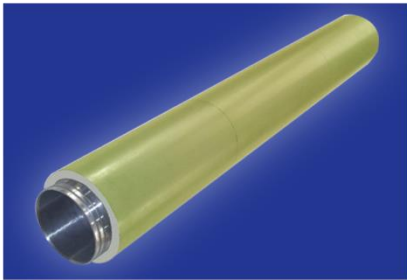
## 9. Solar pv&solar heating targets(1)

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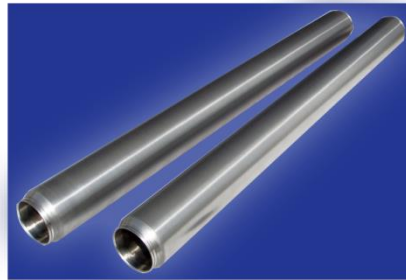


- SOLAR PV targets suit for: VON ARDENNE,SINGULUS,GLOBAL SOLAR coating system
- CIGS, a-Si, CdTe Thin film solar cell target
- Mo , Al, ITO Electrode/conductive layer target
- AZO, ITO Transparent conductive layer 、 ZnO target
- Target size: Single pc up to 4000mm

## 9. Solar pv&solar heating targets(2)



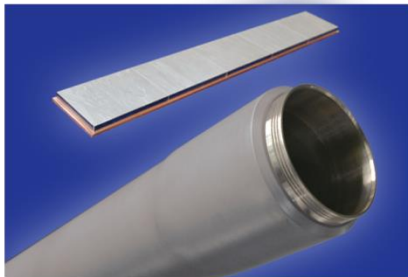
AZO



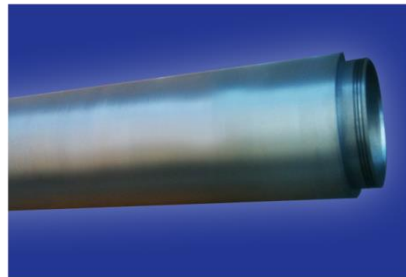
Cr



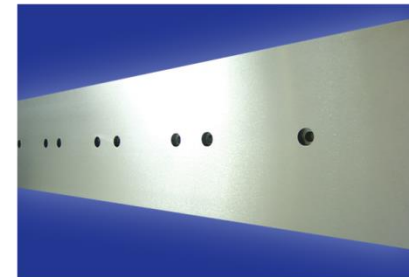
Al



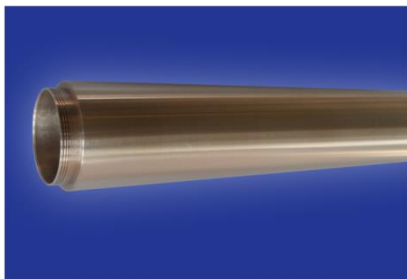
Si



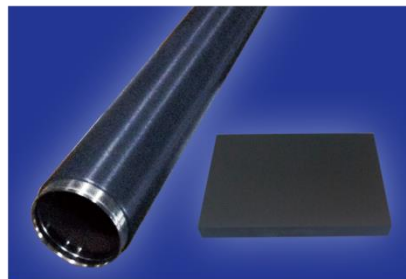
Monolithic rotary Mo



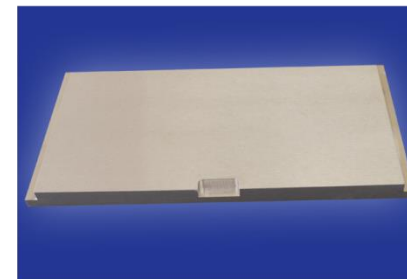
Mo



CuNi



NbOx



NiCr

# 10. Optics, Optical Communication, Optical storage targets(1)

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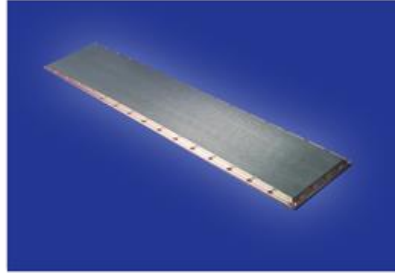
- We supplies targets for thin film filters(TFF)and DWDM, e.g. Ta<sub>2</sub>O<sub>5</sub>(p 90X10mm) and grain(1-5mm), SiO<sub>2</sub> circle and grain, high purity large size Ta, Nb, Si targets etc.
- Applied for common coating systems like LEYBOLD, OPTORUN, SHI NCRON and WEECO. We also supplies targets and high purity evaporation materials for optical glass, optical crystal and optical communication applications.



# 10. Optics, Optical Communication, Optical storage targets(2)



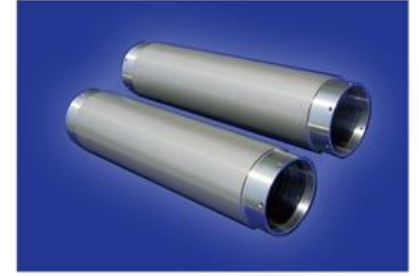
Si



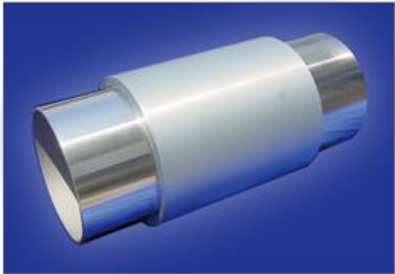
Nb



Al/Ti



SiAl/Nb/Sn/ZnAl/TiOx/Cr



SiAl/Nb/Sn/ZnAl/TiOx/Cr



SiO<sub>2</sub>



Ta



Si

# 11. Bonding/Backing plate services(1)

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We have developed a unique targets/backing plate metallizing technique which owns solid engineering material and long term bonding technique background, can provide advanced bonding service for brittle materials either with low or intermediate thermal expansion or with high thermal expansion property, so as to achieve optimal sputter effect.

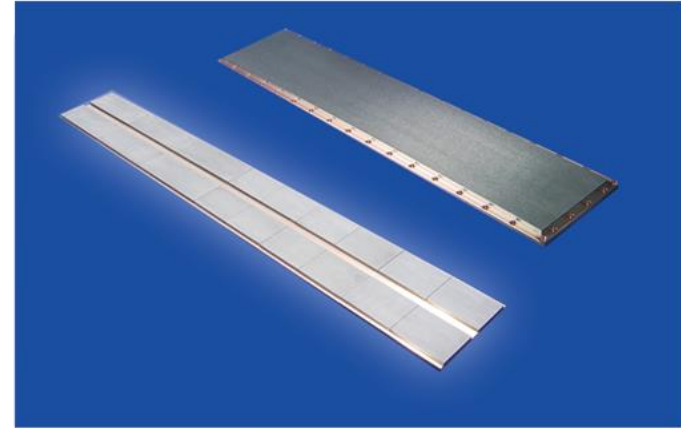
## **The Main Technical And Capacity:**

1. Large scale BSM(back-side metallization) capability for sizes up to 1.8 meters in width and 3.5 meters in length
2. Bonding of rotatable(cylindrical) targets in various materials and configuration
3. C-scan: Ultrasonic test equipment to verify bonding integrity
4. Precision machining/bonding capability for designing and building backing plates from a variety of materials, such as OFHC Copper, Ti-tanium, Stainless Steel, Molybdenum

# 11. Bonding/Backing plate services(1)



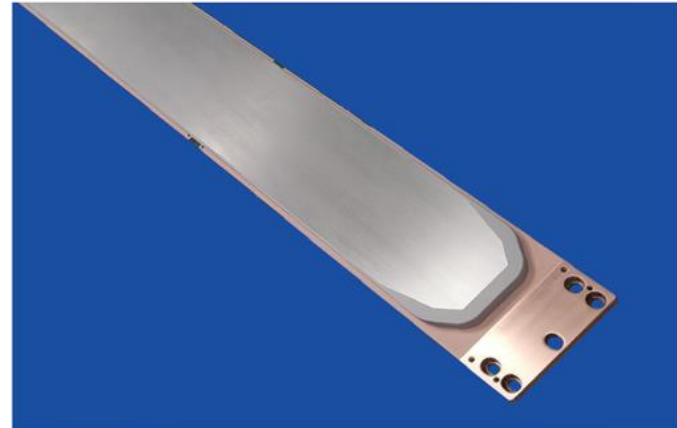
Bonding on rotary AZO target



Bonding on Si + Bonding on Nb



Bonding on ITO target



Bonding on Mo target