東榮開發有限公司

DONG RONG DEVELOPMENT CO., LTD.

1 Company Introduction

2 Product Intro

3 Future Strategy

1.1 Company Intro

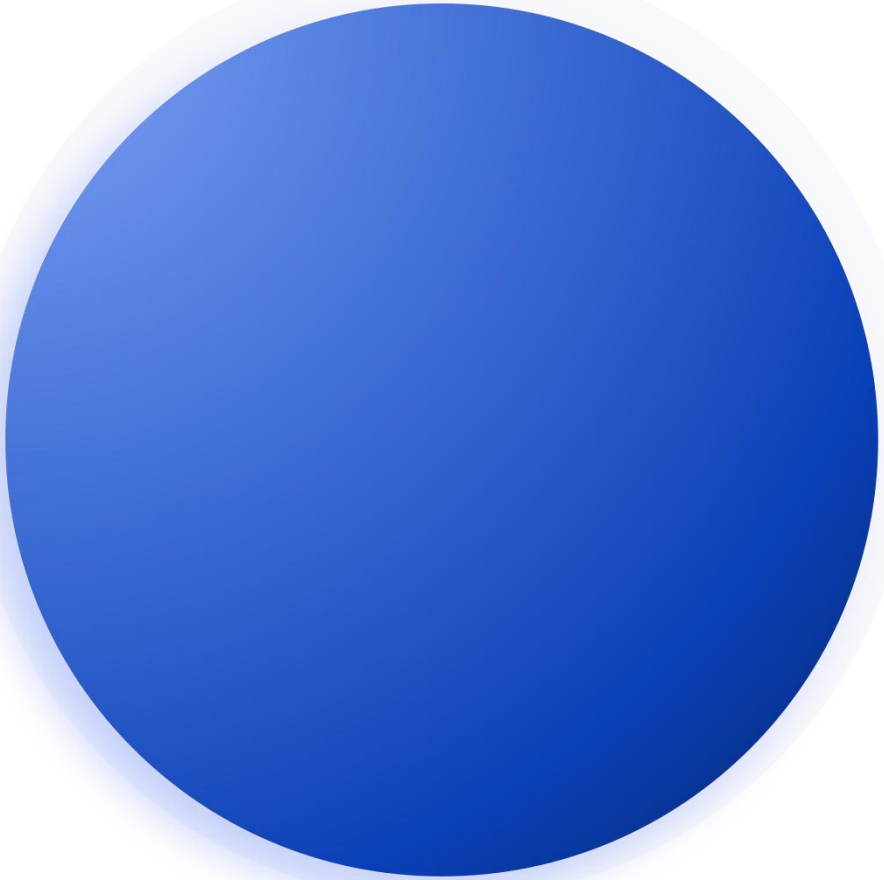
High-tech enterprise

Business Model

We specialize in tungsten and molybdenum materials, developing and producing high-performance YXZ materials.

Key Strength

Using mine resources and partnerships with major state-owned enterprises, we create a full-service industry chain from raw materials to custom high-end products.



Product Market Coverage

Our products are widely used in aerospace, semiconductors, welding, and medical industries and are exported worldwide, including Europe, America, Japan, and Taiwan.

Military-Grade Manufacturing

We focus on military and industrial fields, producing high-precision tungsten and molybdenum products that meet military-grade standards

1.2 Core products

- We provide tungsten and molybdenum products along with advanced YXZ materials and components.

Tungsten Products

- Ammonium paratungstate
- Tungsten sheet
- Tungsten powder
- Tungsten bar
- Tungsten slab
- Tungsten wire
- Tungsten rod
- Tungsten electrode
- High-precision tungsten strip
- Tungsten heterogeneous parts
- Tungsten ball, tube, block, target, crucible, etc.

Molybdenum Products

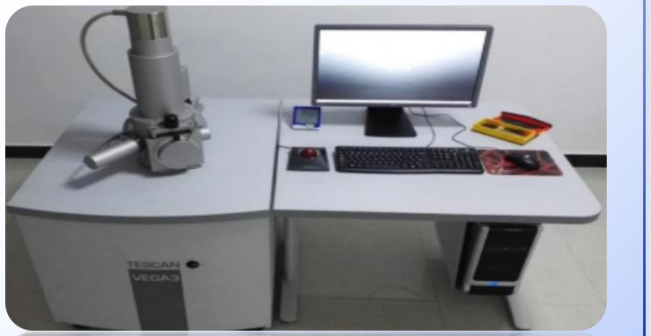
- Ammonium molybdate
- Ammonium molybdate
- Molybdenum sheet
- Molybdenum powder
- Molybdenum rod
- Molybdenum bar
- Molybdenum slab
- Molybdenum plate
- Molybdenum wire
- Molybdenum electrode
- Molybdenum anisotropic parts
- Molybdenum tube, block, target, crucible, etc.

Alloy Products

- Tungsten Alloy
- Tungsten-Copper Composite Alloy
- Cemented Carbide Materials
- Molybdenum Alloys
- Multi-Layered Laminated Wire
- Ultrafine Precious Metal Powders
- Cobalt-Based Aerospace Welding Wire
- Tungsten-Rhenium Alloy Wire
- Molybdenum-Copper Hybrid Alloy
- Next-Generation High-Strength & Toughness Tungsten Alloy
- Titanium alloy products featuring advanced YXZ materials and components for industrial applications.

1.3 Technical Strength

- We use advanced equipment to inspect and analyze tungsten and molybdenum products, ensuring quality control and supporting new product development.



TESCAN SEM Solutions

Atomic Absorption Spectroscopy (AAS)

Inductively Coupled Plasma-Optical Emission Spectrometry (ICP)

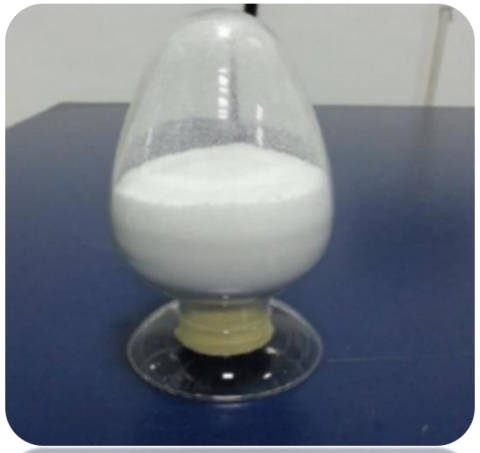
LECO Carbon Sulfur Analyzer

LECO Oxygen / Nitrogen Analyzer

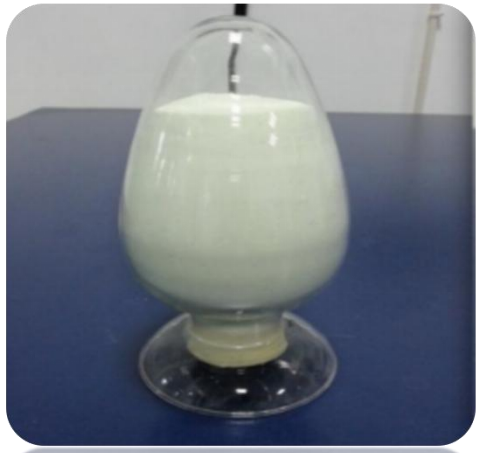
Mastersizer Laser Diffraction Particle Size Analyzer

2.1 Molybdenum Compounds

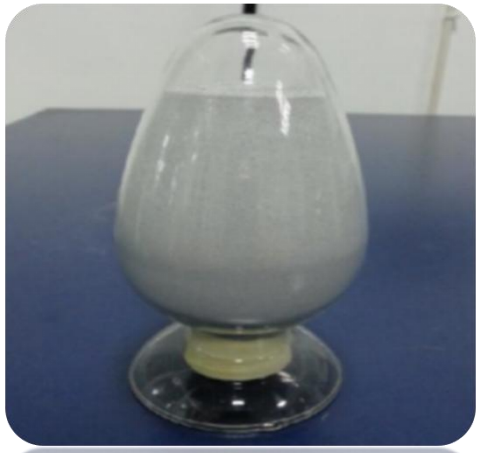
Ammonium Dimolybdate (ADM)



Ammonium Heptamolybdate (AHM)



High-purity Molybdenum Trioxide (Mo03)



Sparingly soluble Molybdenum Trioxide (Mo03)

- Our products maintain ultra-low impurity levels, with elements W and K below 30ppm and heavy metals under 2ppm.
- The physical properties and crystal shape can be customized, with a loose ratio of 0.8a/cm³–1.6a/cm³ and D50 between 110μm–240μm. Crystal forms include large single, semi-single, and clad crystals.
- Molybdenum trioxide can be precisely controlled at high, medium, and low temperatures, making it adaptable to various production systems.

2.2 Molybdenum Products

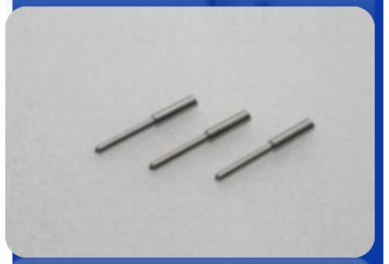
We offer a wide range of specialized molybdenum products, including wires, rods, plates, sheets, targets, alloys, and sintered parts. We also provide wire products in various specifications, with options for added alloying and rare earth elements, supporting ceramic metallization and thermal spraying for surface hardening.

Molybdenum Powder

Molybdenum Bars

Molybdenum Wire

2.3 Tungsten and Molybdenum Products

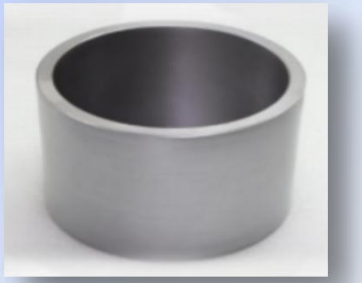


Parts and components

We offers quartz and sapphire crystal furnaces, tungsten-molybdenum crucibles, and specialized products for rare earth smelting.

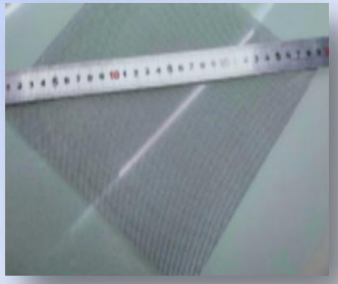
Simmering crucibles

Tungsten Crucible



Molybdenum Crucible

Tungsten Crucible



Molybdenum Mesh

Molybdenum Slot

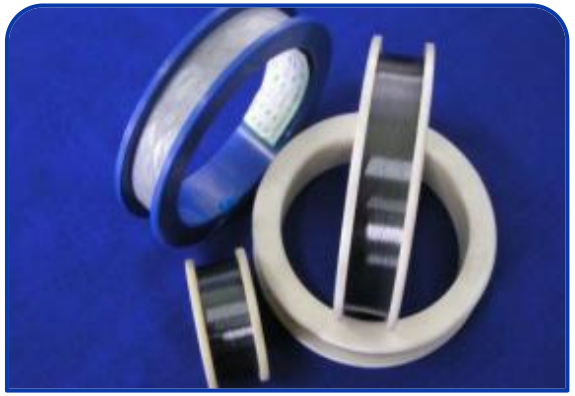
Tungsten Bowl

2.4 Tungsten and Molybdenum Products

We offer various molybdenum and tungsten products, including coarse and fine molybdenum wire (black and white), molybdenum rods (black, polished, and alkali-washed), molybdenum sheets, plates, and foils. Additionally, we provide tungsten wires, rods, sheets, plates, and foils.

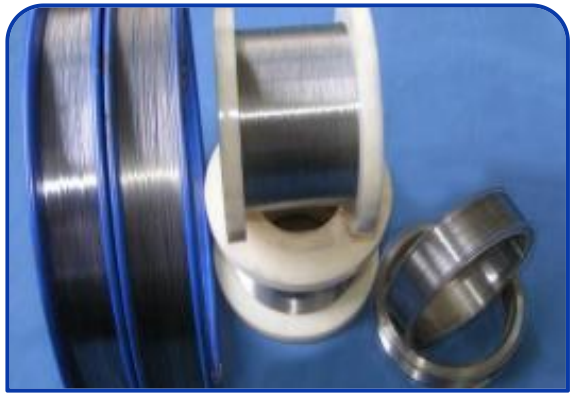
High Purity Molybdenum wire

- It is used in filament cores, brackets, molybdenum foil tape, heating elements, automotive spraying, molybdenum mesh, gates, and various molybdenum components.



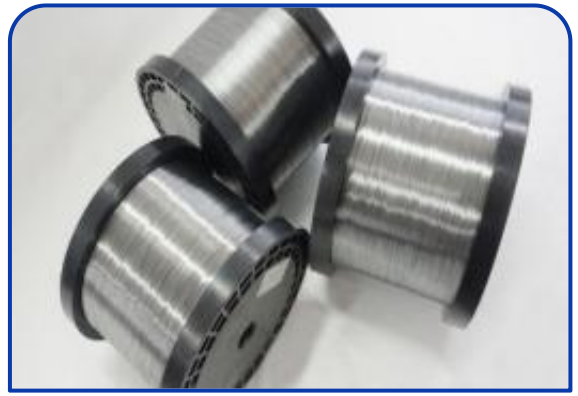
Lanthanated Molybdenum Wire

- It is used in filament cores, brackets, glass sealing components, furnace heating parts, high-temperature elements, molybdenum cutting wires, electron tube reeds, gates, and automotive spraying.



Yttrium Molybdenum Alloy Wire

- It is used in molybdenum foil strips, brackets, gates, furnace heating parts, and high-temperature elements.



Potassium-doped Molybdenum Wire

- It is primarily used in filament cores, brackets, furnace heating parts, and high-temperature components.

2.5 High Purity Alloy Products (cont.)

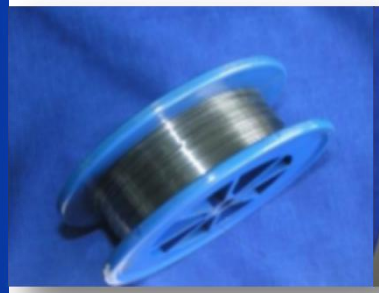
We offer a variety of tungsten, molybdenum, rhenium, and alloy products, including wires, strips, sheets, foils, composite and laminating materials, alloy products, and processed parts. Product types include:

- Wire
- Polished rods
- High-precision narrow bands
- Composite materials
- Laminating materials
- Cobalt-based aerospace welding wire
- Pipes and custom-shaped products

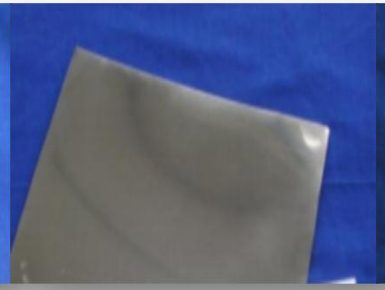
Tungsten-Rhenium Alloy Wire

Ultrafine Precious Metal-Coated Wire

Precision-Polished Rods

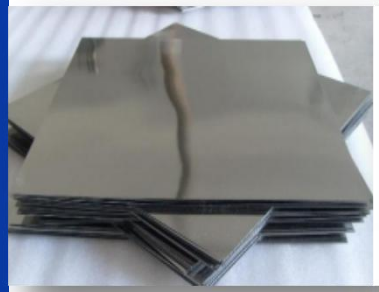


High-Precision Tungsten Strips



Molybdenum-Rhenium Alloy Foil

Composite Manganese-White Copper Strip

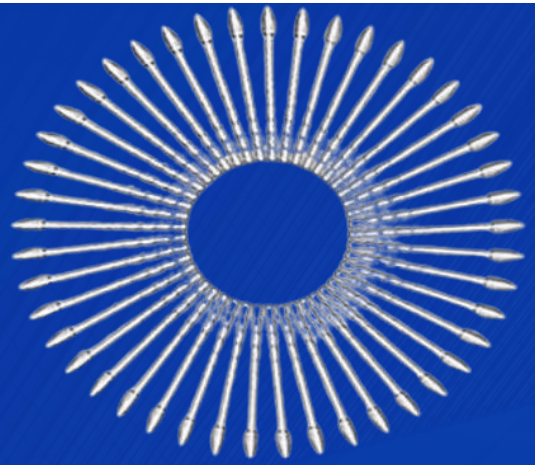


Precision-Engineered Plates and Sheets

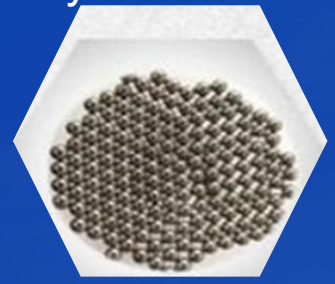
Tungsten and Molybdenum Pipes

Cobalt-Based Aerospace Welding Wire

2.6 Tungsten and Molybdenum Products



It is highly dense (~18.5g/cm³), strong, and ductile, with excellent impact toughness, low thermal expansion, good thermal conductivity, and strong resistance to corrosion, oxidation, and high-energy rays.



Defense Industry

Aerospace

Nuclear Healthcare

Counterweights

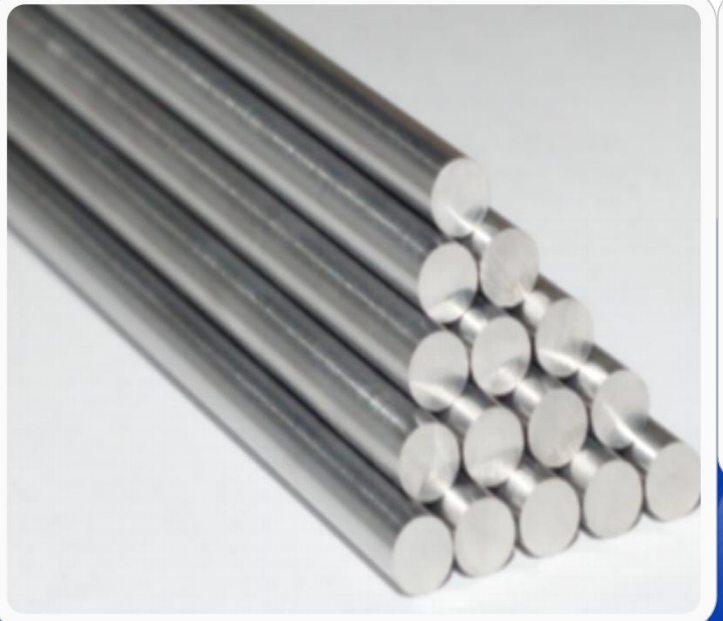
2.7 New High Density Tungsten Alloy

It features high strength, toughness, low porosity, and minimal cobalt content, making it ideal for kinetic armor-piercing cores, fragments, and prefabricated rings—an excellent alternative to depleted uranium.

Current Tungsten Alloy Properties						
Model	**Condition**	**Density (g/cm³)**	**Tensile Strength (MPa)**	**Elongation (%)**	**Impact Energy (J/cm²)**	**HRC**
90W	Heat Treated	17.3 ± 0.1	900-950	25	250-300	25
	Forging	17.3 ± 0.1	1500	8	80	47 ± 1
91 W	Heat Treated	17.5 ± 0.1	900-1000	25-30	200-300	32-38
	Forging	17.5 ± 0.1	1500	8	80	47 ± 1
91.5 W	Heat Treated	17.5 ± 0.1	900-1050	25-30	200-300	32-38
	Forging	17.5 ± 0.1	1500	8	60	46
91.8 W	Heat Treated	17.6 ± 0.1	900-1050	25-30	200-300	32-38
93 W	Heat Treated	17.8 ± 0.1	1000-1050	16-20	≥120	36
95 W	Heat Treated	18.1 ± 0.1	1000-1050	14-18	≥65	32-38
97W	Heat Treated	18.5 ± 0.1	≥920	≥8	≥16	

2.8 Tungsten Alloy Bars

Category	Specification	Performance Index	Result	Test Standard
90-91W (Heat treated)	Φ50-70 × 300 (mm)	Tensile Strength	1100 MPa	GB/T 228.1-2010
		Elongation	28.8 %	
		Impact Toughness	141 J/cm²	GB/T 229-2007
		Density	17.43 g/cm³	GB/T 3850-2015



Molding

Isostatic pressing

Sinter

2.9 High-compression, Low-plasticity (fragile) Tungsten Alloy

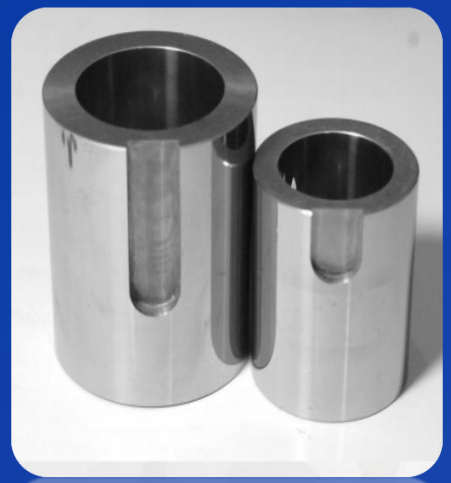
- This tungsten alloy offers high compressive strength and excellent tensile performance, with adjustable properties to suit different applications. It is dense, structurally uniform, and optimized for strength and durability.
- The design adapts to different targets and fragmentation effects, enabling the development of multi-functional, multi-structure composite bullet cores. These components enhance penetration depth, stability, and deflagration performance in armor-piercing applications.

Category	Product Performance
Tensile Strength (MPa)	400 ~ 1000 (adjustable)
Compressive Strength (MPa)	2600 ~ 3200 (adjustable)
Density (g/cm³)	18.2 ~ 18.5
HRC	29 ~ 32
Elongation (%)	< 1%
Impact Toughness (J/cm²)	3 ~ 5
Specification Size (mm)	φ10~30 × 150

2.10 Fragments & Prefabricated Rings

pecification (mm)	Motel	Tolerance (mm)	Standard	Density (g/cm³)	Compressive Strength (KN)	Deformation (%)	Fracture
φ3.0	W252	± 0.015	GJB 3793A-2018 GJB 3793A-2018 GJB 3793A-2018	17.30~17.80	5	≤40	No Crack
φ3.3	W221	± 0.015		18.40~18.70	7	≤40	Continuous 5~10s, No Crack
φ3.5	W232	± 0.015		17.90~18.20	13	≤40	No Crack
φ4.0	W232	± 0.015		17.90~18.20	16	≤40	No Crack
φ5.0	W232	± 0.030		17.90~18.20	20	≤40	No Crack
φ6.0	W221	± 0.050		18.40~18.70	55	≤40	No Crack
φ11	W232/ W252	± 0.050		17.80~18.20	>120	<40	No Crack

2.11 High Specific Gravity Tungsten Alloy Shielding Tank







2.12 Advanced YXZ Materials & Components Designed For Defense Applications

- This technology uses a unique process formula, specialized equipment, and precise processing methods, ensuring a fully developed system from raw materials to finished products.

Technological innovation

- We have developed a new titanium alloy system for tacking applications, with a unique composition distinct from existing grades.
- This original multiphase composite material offers exceptional high-temperature strength, plasticity, and reactivity.
- Our titanium alloy components are the first of their kind in China.
- Future improvements will be made based on application needs, model specifications, and performance requirements.
- It features a high modulus of elasticity, excellent high-temperature plasticity, and superior strength.

Performance Benefits

- This material's high-temperature deformation enables a high-velocity jet with strong kinetic energy, enhancing penetration depth.
- Its powerful shock wave effect creates large impact cavities in concrete. The special ceramic phase, with high temperature resistance and strength, forms a solid-state rod jet with a thicker diameter under detonation.
- Compared to a copper cover, its armor-piercing aperture is over twice as large. Compared to traditional titanium alloy covers, it expands the armor-piercing aperture by over 30%, with excellent penetration stability.
- The front and back cratering effects on concrete targets are significantly greater, delivering superior damage compared to copper and traditional titanium alloys.

2.13 Advanced YXZ Materials & Components Designed For Defense Applications (cont.)

Static armor breaking results for reinforced concrete targets (C40).

Category	Penetration (mm)	Inlet Diameter (times cover diameter)	Outlet Diameter (times cover diameter)	Frontal Crater Diameter (times cover diameter)	Frontal Crater Depth	Rear Crater Diameter (times cover diameter)	Rear Crater Depth
Small to Medium Caliber	500	0.6-0.65	0.45-0.5	4-6	90-100	7-10	110-150
Large Caliber	1300-1500		0.4	5-6	130-150	4-5	200-250

Comments:

- The current models achieve better penetration of target walls.
- For different product sizes, the inlet and outlet hole diameters remain consistent, but the caving area varies.
- To maximize the breaking effect, the product structure must be designed to match the material's characteristics.

3 Future Strategy

Technology-driven, Global approach

Invest in R&D, drive innovation, maintain technological leadership, and support high-quality development for high-end manufacturing.

Social responsibility

Empower employees to achieve self-worth, provide excellent service to users, generate strong returns for shareholders, and foster harmonious growth with society.

THANK YOU