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MATERIALS TECHNOLOGY COMPANY

广东先导稀材股份有限公司
VITAL MATERIALS CO., LIMITED



领先科技 引导未来
Innovative Materials Solutions
For Tomorrow's Technology

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行业地位 Core Competence

全球稀散金属市场的重要生产企业,是首个实现国产化大尺寸ITO旋转靶的供应商(G11),全球三大红外材料供应商之一,化合物半导体衬底产品的核心供应商,也是全球知名薄膜太阳能生产商的战略合作伙伴。

Vital Materials is the world's leading producer of rare metals as well as the first Chinese manufacturer to deliver G11 rotary ITO targets. Vital is also one of the world's three major suppliers of infrared materials, a key supplier of compound semiconductor substrates, and a strategic partner of the world's largest thin film solar manufacturer.



全球网点:38个
Global Network: 38



国家:16个
Countries: 16



全球员工:4500人
Employees: 4,500

COMPANY PROFILE

公司简介

先导公司于1995年开始涉足稀散金属行业,2003年在清远正式更名为先导稀材,是一家全球领先的专业从事稀散金属及其高端材料、器件、模组、系统的研发、生产、销售和回收服务的高新技术企业,拥有国家稀散金属工程技术研究中心、国家认定企业技术中心、博士后科研工作站、设有独立的先进材料研究院。

Founded in 1995, Vital Materials is a high-tech enterprise and a global leader in R & D, production, sales, and recycling of rare metals and hi-tech materials, devices, modules, and systems. It has established the China National Rare Metals Engineering Research Center, China National Enterprise Technology Center, Post-Doctoral R & D Center, and Vital Advanced Materials R & D Center.

先导稀材实践垂直一体化发展战略,聚焦快速发展的高科技产业,在稀散金属、先进材料和资源回收业务的基础上,重点布局下游器件、模组、系统等领域,产品应用于半导体、微电子、5G通讯、光伏、LED照明、红外光学、显示、辐射探测、制药、动物营养等。

Vital Materials implements a unique vertical integration strategy. We are dedicated to developing advanced materials and technologies for fast growing, high-tech companies in the semiconductor, microelectronics, 5G communication, photovoltaics, LED, infrared optics, display, radiation detectors, pharmaceutical, animal nutrition, and other industries.

先导稀材凭借优秀的技术研发平台来拓展产品组合和回收服务范围,为客户提供有价值的解决方案。不断发展的清洁技术是我们具有环境责任感的体现。这些优势驱使我们持续成长和发展,成为一个有社会责任感的材料科技企业。

Vital Materials' first class technical R&D platform continuously expands our portfolio of products and recycling services as a valued solution provider for our customers. Our ongoing development of clean technologies reflects our position as a leader in environmental responsibility. Both of these initiatives enable us to grow and evolve sustainably as a responsible materials technology firm.

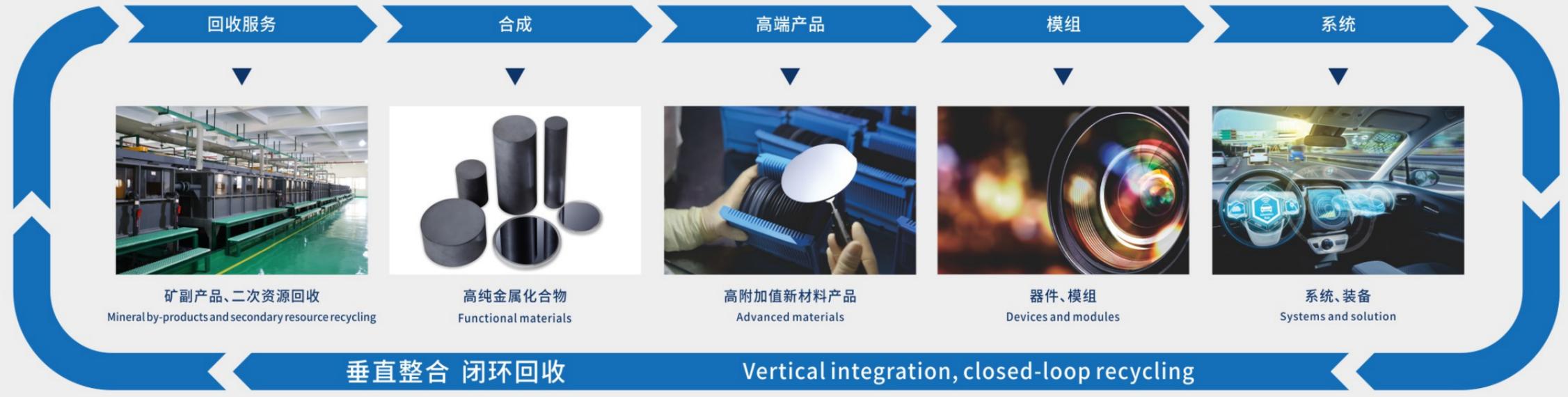
COMPANY HISTORY

发展历程



INDUSTRIAL CHAIN

产业链



COMPANY MISSION

企业使命

VITAL

成为全球稀缺金属材料
创新与发展的引领者

Be the global leader in innovation and
development of rare metals based
materials and technologies

为全球高科技产业提供
先进材料和技术解决方案

Provide advanced materials and technical
solutions for the global high-tech industry

COMPANY STRATEGY

公司战略

- 全球布局
 - 垂直一体化
 - 聚焦稀缺金属
 - 成为首选的闭环回收服务商
 - 为稀缺金属的应用提供专业解决方案
 - 专注于快速发展的太阳能、LED、红外、5G通讯、显示、微电子等
- Global presence
 - Vertical integration
 - Focus on rare metals
 - Be the preferred closed-loop recycler
 - Provide professional solutions for rare metals applications
 - Focus on high growth/tech industries: solar cell, LED, infrared, 5G communication, display, microelectronics, etc.

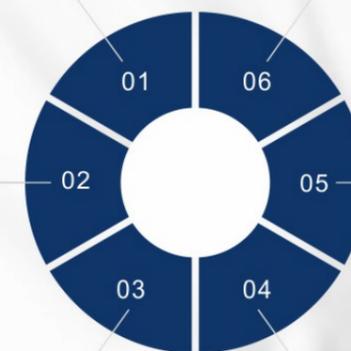
CERTIFICATES

资质认证

- ISO9001质量管理体系
- ISO 9001 Quality Management Systems

- ISO14001环境管理体系
- ISO 14001 Environmental Management Systems

- ISO22000食物链安全管理体系
- ISO 22000 Food Safety Management Systems



- ISO45001职业健康与安全管理体系
- ISO 45001 Occupational Health and Safety Management Systems

- 欧盟饲料添加剂FAMI-QS体系
- FAMI-QS Quality and Feed Safety Management System

- 犹太洁食认证
- Kosher Certification

THIN FILM MATERIALS BUSINESS UNIT

薄膜材料事业部

薄膜材料事业部致力于研发、生产、销售和回收真空镀膜用溅射靶材和蒸发材料。产品系列包括高纯金属、合金、贵金属及陶瓷材料所制成的靶材、锭、颗粒及粉末，被广泛应用于显示、光伏、半导体、精密光学、数据存储及特种玻璃等领域。

The Thin Film Materials Business Unit (VTFM) focuses on R & D, production, sales, and recycling of sputtering targets and evaporation materials for physical vapor deposition (PVD). Depending on the materials, a wide variety of products in different forms and shapes are available. VTFM's products are widely used in the display, photovoltaic, semiconductor, precision optics, data storage, glass, and other industries.

KV MATERIALS属于先导薄膜材料事业部的旗下业务，致力于新兴技术领域开发和制造高性能陶瓷材料，为客户提供更高质量的ITO、IZO和IGZO及其他高迁移率氧化物陶瓷靶材产品，以及更先进的配套技术解决方案。

KV MATERIALS ("KVM") as part of Vital Thin Film Materials business unit, is committed to developing and manufacturing high-performance ceramic materials for emerging technologies, providing customers with higher quality ITO, IZO, IGZO and other high mobility oxide ceramic target products, as well as more advanced supporting technology solutions.

产品&应用 Product & Application

靶材及蒸发料 Target and Evaporation Material

溅射靶材及蒸发料可用于物理气相沉积 (PVD)、分子束外延(MBE)等先进纳米薄膜工艺技术中，应用领域包括半导体、显示、太阳能等各种新兴产业领域。产品包括各类陶瓷靶、金属及合金靶材、各种形态的蒸发类材料等，可根据客户需要定制。

Sputtering targets and evaporating materials can be used in advanced nano-film process technologies such as physical vapor deposition (PVD) and molecular beam epitaxy (MBE). Our products include ceramic, metal, and alloy targets, evaporative materials, etc., and are widely used in semiconductors, displays, solar cells, and other emerging industries. Customized products are also available.

陶瓷靶材 Ceramic Target

ITO	IGZO	CdTe	CIGS	CdS	In ₂ S ₃
In ₂ Se ₃	CdSe	ZnTe	CdZnTe	NbOx	

金属靶材 Metal Target

Al	Cu	Cr	Ge	In	Mo
Ni	Ti	V	Nb	Si	Sn
Ta	AlSc	CuGa	BeCu	CIG	GeSbTe
WTi	SiAl	NiPt	CoTaZr	CrCo	InSn
ZrY	C-GST	Ag	Au	Pt	Ru



FHR-先导薄膜事业部旗下品牌 FHR-A sub-division of VTFM

FHR致力于薄膜技术、真空工艺设备的研发、溅射靶材的制造和薄膜领域的服务。主要的业务领域为真空镀膜设备的制造，有FHR. Roll, FHR. Line, FHR. Star, FHR. Boxx系列产品，应用于薄膜太阳能电池、显示、汽车、MEMS传感器、光学、滤波器和装饰等领域。

FHR is committed to the research and development of thin film technology, vacuum process equipment, sputtering target manufacturing, and thin film technology services. Its primary business is the manufacture of vacuum coating equipment, including FHR. Roll, FHR. Line, FHR. Star, FHR. Boxx series products that are applicable for thin film solar cells, display, automobiles, MEMS sensors, optics, BAW/SAW, and decoration.

真空镀膜设备 Vacuum Coating Equipment

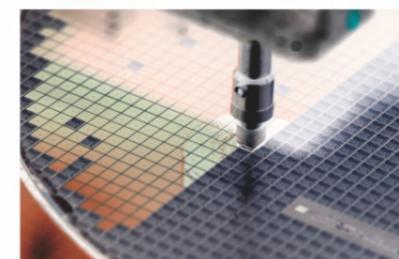
我们致力于工业和研发领域薄膜设备的制造。设备应用蒸发、溅射、PECVD和ALD等技术。我们交付的真空镀膜设备包含用于端口式镀膜的枝叶式设备、用于大面积表面镀膜的高产量连续进料设备、以及用于金属箔或聚合物膜等柔性基材镀膜的创新式卷绕设备。

We manufacture thin film equipment for industrial and R & D use. Our system platforms use sputtering, evaporation, PECVD, and ALD technologies. Based on customer needs, we build highly flexible cluster systems, high throughput and service life optimized continuous flow systems, and even house-sized roll-to-roll systems.

客户服务 Customer Service

我们可以为您提供售前售后工艺调试及技术支持、钨金属全产业链闭环服务、靶材利用率解决方案、电池转换效率提升的解决方案和专业的真空腔体部件清洁及残渣回收服务。

We provide you with pre-sales and after-sales process debugging and technical support, indium metal whole industry chain closed-loop service, target material utilization solutions, solar cell conversion efficiency improvement solutions, and professional vacuum chamber components cleaning and scrap recycling services.



INFRARED & LASER BUSINESS UNIT

红外与激光事业部 (光智科技)

红外与激光材料事业部是中国红外激光和传感器市场生力军, 主要从事红外、激光材料、红外光学部件、红外热成像系统、辐射探测材料的研发、生产和销售等业务。公司的各类产品被广泛应用于诸多领域, 如: 医疗、安防、车载和工业等。先导红外提供各种红外、激光光学元件的加工、镀膜、产品检测等服务。

The Infrared & Laser Materials Business Unit is a new force in China's infrared laser and sensor market. The business unit is engaged in the R & D, production, and sales of infrared and laser materials, infrared optical components, infrared thermal imaging systems, and radiation detection materials. Our products are widely used in many fields, such as medical, security, automotive, and industrial use. Vital's Infrared & Laser Materials Business Unit provides various infrared and laser optical component processing, coating, product testing, and other services.



产品&应用 Product & Application

红外激光材料 Infrared & Laser Material

我们可以为客户提供各类红外激光、成像、探测类材料, 这些材料在激光加工、工业检测、汽车夜视、医疗等领域具有广泛应用。

We provide infrared laser, imaging, and detection materials, materials, used in laser processing, industrial detection, automotive night vision, medical treatment, etc.

Ge	ZnSe	ZnS	Chalcogenide glass
GaAs	GaSb	InSb	CZT

辐射探测材料 Radiation Detection Material

我们可提供的辐射探测材料有LYSO (硅酸钪镧晶体)、探测器级锗单晶、碲锌镉等, 可应用于医疗探测、高能物理、核物理、油井钻探和环境检查等领域。

We also provide radiation detection materials including LYSO (Lutetium yttrium silicate crystal), detector-grade Ge single crystal, CZT, etc., which are mainly used in health detection, high-energy physics, nuclear physics, oil well drilling, environmental inspection, and other industries.

Detector-grade Ge	LYSO	CZT
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红外光学组件 Infrared Optical Component

先导可提供各类光学组件、探测芯片、光学加工及镀膜服务等。我们拥有稳定的抛光、镀膜生产线, 多种加工设备和检测设备, 可以根据客户要求为客户提供来料加工服务, 为客户提供纯度检测、面型检测、透过率检测、电阻率导电类型等各种检测服务, 并可根据客户具体需求制定检测方案。

We provide various optical components, detection chips, optical processing, and coating services for customers. We have a stable and fully equipped production line for processing and testing, which supports grinding, polishing, and coating service, purity testing, surface inspection, transmittance measurement, resistivity testing, and so on. We can also develop processing and testing solutions according to your specific needs.

光学镜头 Optical Lens

形状: 球面、非球面、衍射物、曲面透镜阵列

Geometries include: spheres, aspheric surface, diffractive objects, freeform lens arrays

光学涂层: 增透膜、类金刚石碳膜、激光耐损伤膜

Optical coatings include: broad band anti-reflective (BBAR), diamond-like carbon (DLC), laser damage-resistant coatings

红外探测器 Infrared Detector

先导拥有前沿的红外技术, 可提供更小体积、更低功耗和更优系统成本的解决方案, 推动热成像在各个领域的广泛应用。

Thanks to our cutting-edge infrared technology, we can provide compact, energy saving, and cost-effective infrared detector solutions, and are able to promote wide application of thermal imaging in various fields.

红外模组和系统 Infrared Module & System

用于长波非制冷、中波制冷、长波制冷等各波段的各种消热差、调焦、变焦红外光学模组和系统

We can provide various aberrations and focusing and zoom infrared optical modules and systems used in long-wave uncooled, medium-wave refrigeration, and long-wave refrigeration.

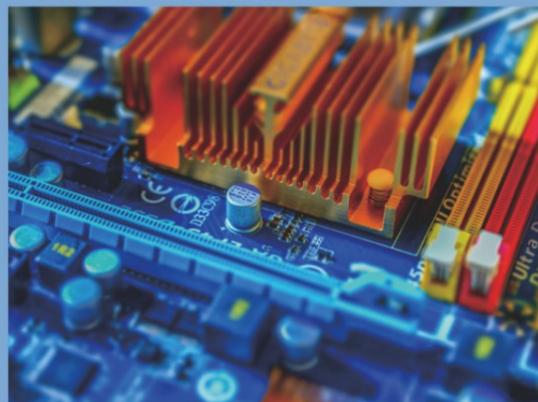


COMPOUND SEMICONDUCTOR BUSINESS UNIT

化合物半导体事业部

化合物半导体事业部主要从事于III-V化合物半导体材料及其外延片、芯片产品的研发、生产和销售等业务。其主要产品包括高纯材料、半导体衬底、电子气体、MO源、PBN、半导体外延片和激光芯片，广泛应用于LED照明、3D传感、面部识别、无人驾驶、AR/VR、5G通讯等多个领域。

The Compound Semiconductor Business Unit is engaged in the R & D, production, and sales of III-V compound semiconductor materials, epitaxial wafers, and chips. Our products include high-purity materials, semiconductor substrates, electronic gases, metal-organic (MO) sources, PBN ceramic, epitaxial wafers, and laser chips, which are widely used in LED lighting, 3D sensing, facial recognition, self-driving, AR/VR, and 5G communication applications.



产品&应用 Product & Application

高纯材料 High Purity Material

先导稀材可以为客户提供高纯金属、MO源、电子气体等产品，可用于晶体生长、CVD工艺、MBE技术等先进工艺中。其中MO源产品拥有Vital Materials(中国)和KE Materials(韩国)两个系列。

We supply high purity metals (MBE grade), MO sources, electronic gases, and other products that can be used in crystal growth, CVD process, MBE technology, and other advanced process technologies. We have two production bases for MO sources products—Vital Materials (China) and KE Materials (South Korea).

高纯金属 High Purity Metal				
Sb	As	Ga	Cu	In
P	Se	Te	Zn	Al

MO源 MO Sources			
TMGa	TEGa	TMIn	TMAI

电子气体 Electronic Gas			
AsH ₃	GeH ₄	PH ₃	H ₂ Se

技术陶瓷 Technical Ceramics
PBN crucibles, boats and components

外延衬底 EPI Ready Substrate

先导稀材采用先进的高精度线切割设备和高平面度研磨抛光设备，通过CMP抛光、清洗和包装等工艺为外延生产商提供高品质的EPI-Ready衬底，这些产品在光电器件和射频器件领域都具有广泛的应用。

We manufacture and provide high-quality EPI-ready semiconductor substrates using several advanced manufacturing processes such as high-precision wire-cutting equipment, high-flatness grinding and polishing equipment, specialized surface cleaning, and finish. These products are suitable for advanced optoelectronic epitaxial applications and RF device applications.

GaAs	InP	Ge
2, 4 and 6 inch	2, 3 and 4 inch	2, 4, 6 and 8 inch

外延片 Epitaxial Wafer

我司采用德国进口先进MOCVD系统生产制造应用于激光光源芯片生产的纳米级外延片，可提供外延片生长的代工和定制化服务。

We manufacture nano-scale epitaxial wafers used in the production of laser chips, using a multi-reactor MOCVD platform imported from Germany. We can provide foundry and customized services for growing epitaxial wafers based on the customers' design and requirements.

GaAs-based	InP-based
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VCSEL激光芯片 VCSEL Laser Device

我司可提供650-1550nm波段激光光源芯片产品，并接受客户定制化需求，包含单管与阵列产品。我司可根据客户的芯片版型以及每层加工设计的特殊要求，从外延片清洗开始，到芯片成品出库检验的全套芯片线，均可提供代工服务。

We have large volume production capacity for 650-1550 nm wavelength laser chips, including single-emitter or array type devices, and we also provide customized solutions. We provide contract manufacturing services such as epitaxial wafer cleaning and inspection of finished chips based on customer requirements, for example, custom chip layout or fabrication processes.

940nm VCSEL Single/Array	850nm VCSEL Single/Array
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FUNCTIONAL MATERIALS & RECYCLING BUSINESS UNIT

功能材料事业部

功能材料事业部一直以来秉持可持续发展理念，产品包括稀有金属、合金与化合物，我们也专注于绿色回收事业，为全球客户提供金属闭环回收和循环利用服务。

The Functional Materials & Recycling Business Unit consistently pursues sustainable development. We supply rare metals, alloys, and compounds and provide closed-loop metal recovery and recycling services for global customers.

我们的子公司“Vital Pure Metal Solutions GmbH”（“VPMS”）拥有加工和回收各种复杂材料（包括有害材料）的许可证，并可为全球客户提供销售和回收解决方案。

Our subsidiary, "Vital Pure Metal Solutions GmbH" ("VPMS"), is licensed to process and recycle a wide range of complex materials, including hazardous materials, and provides sales and recycling solutions to customers worldwide.

我们为您提供：

- 专业的分析技术或分析手段
- 适用于所有含稀有金属原料的可持续环保解决方案
- 根据最严格的EHS要求和最高行业标准处理您的材料
- 先进的综合回收技术，帮助整个复杂回收及精炼过程实现高成本效率

We Provide You:

- Professional analysis technology
- Sustainable environmental solutions for all raw materials containing rare metals
- Process your materials as per EHS requirements and the highest industry standards
- Advanced synthetical recovery technology, and cost efficient metal extraction processes for complex recovery and refining



产品与服务 Product and Service

化学产品 Chemical Product

化学品业务主要包括稀有金属（硒、碲、铋、铟、镓、锗、镉、钴、贵金属等）、合金及其化合物产品，其中特殊化学品包括低熔点合金、硒钴锌类饲料添加剂、铋原料药、环保颜料，这些产品可被广泛应用于农业、医药、塑料、涂料、动力电池和焊料等各类高新技术与战略新兴行业领域。

Our chemicals business is mainly engaged in high-purity rare metals (Se, Te, Bi, In, Ga, Ge, Cd, Co, precious metals, and other metals), alloys, and compound products. The special chemicals include low melting point alloys, Se/Co/Zn-containing feed additives, bismuth APIs, and environment-friendly pigments, which are widely used in agriculture (feed additives), pharmaceuticals, plastics, coatings, power batteries, solder, and other high-tech and strategic emerging industries.

回收服务 Recycling Service

功能材料事业部拥有先进的火法和湿法冶金工艺，采用侧吹炉工艺、真空蒸馏工艺、以及溶剂萃取、离子交换、电解等先进工艺，回收和精炼各种含稀有金属固体、浆料和溶液。

The Functional Materials & Recycling Business Unit adopts advanced pyrometallurgical and hydrometallurgical processes, uses side-blowing furnace technology, vacuum distillation technology, and advanced processes such as solvent extraction, ion exchange, and electrolysis to recover and refine various solids, slurries, and solutions containing rare metals.

我们已经获得对含硒、含碲及有色金属冶炼废物等《危险废物经营许可证》，可以协助上游冶炼企业提供回收含稀有金属、贵金属的富集渣，也可以协助下游材料、器件企业回收各种含稀有金属、贵金属的边角料、寿命终结的器件等二次资源的服务，可回收的金属达20种以上。

We are licensed to operate hazardous waste such as selenium-containing, tellurium-containing, and non-ferrous metal smelting waste. We can assist the upstream smelting enterprises in recycling of rare metals, precious metal-containing materials, and can also assist the downstream material/device enterprises in recycling a variety of rare metals, precious metal scrap, other secondary resources, and device end of life recycling. Vital Materials can recycle almost any type of rare metal containing waste.



RARE METAL & ADVANCED MATERIALS

稀散金属材料&先进材料

Product 产品			
锑 Antimony	高纯锑	Sb	
	三氯化锑	SbCl ₃	
	氧化锑	Sb ₂ O ₃	
	锑化镓	GaSb	
	锑化铟	InSb	
	锑化铜	Cd ₃ Sb ₂	
锡锑	SnSb		
砷 Arsenic	高纯砷	As	
	砷化镓	GaAs	
	砷化铟	InAs	
	砷化铜	Cd ₃ As ₂	
	砷化铋	Bi ₂ As ₃	
	砷化锌	Zn ₃ As ₂	
	砷化铅	Pb ₃ As ₂	
	硫化砷	As ₂ S ₃	
	三氯化砷	AsCl ₃	
	砷化铟	InAs	
铋 Bismuth	高纯铋	Bi	
	氧化铋	Bi ₂ O ₃	
	氢氧化铋	Bi(OH) ₃	
	三氯化铋	BiCl ₃	
	硝酸铋溶液	Bi(NO ₃) ₃	
	柠檬酸铋	C ₆ H ₈ BiO ₆	
	次硝酸铋	Bi ₂ O(OH)(NO ₃) ₂	
	次水杨酸铋	C ₇ H ₅ BiO ₆	
	三硫化二铋	Bi ₂ S ₃	
	氯化铋	BiCl	
	铝酸铋	Bi ₂ (Al ₂ O ₇) ₃ · 10H ₂ O	
	次碳酸铋	(BiO) ₂ CO ₃	
	钒酸铋	BiVO ₄	
	胶体次枸橼酸铋	Bi ₂ K ₂ N ₂ C ₁₂ H ₁₀ O ₆	
	次没食子酸铋	C ₇ H ₅ O ₆ Bi	
	酒石酸铋钠	C ₁₂ H ₁₂ BiNa ₂ O ₁₈	
	碘化铋	BiOI	
	碘没食子酸铋	C ₇ H ₅ BiO ₆	
	五水合硝酸铋	Bi(NO ₃) ₃ · 5H ₂ O	
	三溴铋	C ₁₈ H ₁₈ BiBr ₃ O ₃	
	碲化铋	Bi ₂ Te ₃	
	硒化铋	Bi ₂ Se ₃	
镉 Cadmium	高纯镉	Cd	
	氧化镉	CdO	
	氯化镉	CdCl ₂	
	碳酸镉	CdCO ₃	
	碲化镉	CdSe	
	四水合硝酸镉	Cd(NO ₃) ₂ · 4H ₂ O	
	硫酸镉	CdSO ₄	
	碲化镉	CdTe	
	铜 Copper	高纯铜	Cu
	镓 Gallium	高纯镓	Ga
		三氯化镓	GaCl ₃
氧化镓		Ga ₂ O ₃	
硫酸镓		Ga ₂ (SO ₄) ₃	
硝酸镓		Ga(NO ₃) ₃ · xH ₂ O	

Product 产品			
锗 Germanium	高纯锗	HP Ge	
	区熔锗	Zone-refined Ge	
	单晶锗用于红外光学	Monocrystalline Ge for Infrared optics	
	多晶锗用于红外光学	Polycrystalline Ge for Infrared optics	
铟 Indium	高纯铟	In	
	氢氧化铟	In(OH) ₃	
	氧化铟	In ₂ O ₃	
	硝酸铟	In(NO ₃) ₃	
	硫酸铟	In ₂ (SO ₄) ₃	
	氯化铟	InCl ₃	
	水合硫酸铟	In ₂ (SO ₄) ₃ · xH ₂ O	
	砷化铟	InAs	
	铅 Lead	高纯铅	Pb
	磷 Phosphorus	高纯磷	P
磷化铟		InP	
磷化镓		GaP	
硫 Sulfur	高纯硫	S	
	硫化亚砷	As ₂ S ₃	
	硫化铋	Bi ₂ S ₃	
	硫化锗	GeS	
	硫化铅	PbS	
	硫化铟	In ₂ S ₃	
	硫化铋	ZnS	
	硫化铋	Sb ₂ S ₃	
	硫化铋	CdS	
	硒 Selenium	高纯硒	Se
碲化铋		ZnSe	
碲化铋		PbSe	
碲化镓		GaSe	
碲化铋		Bi ₂ Se ₃	
碲化铋		TeSe	
碲化铋		In ₂ Se ₃	
碲化铋		CdSe	
碲化铋		GeSe	
碲化铋		SbSe	
二碲化锡		SnSe ₂	
碲化氢		H ₂ Se	
氧化硒		SeO ₂	
亚硒酸钠		Na ₂ SeO ₃	
亚硒酸锌		ZnSeO ₃	
亚硒酸铋		Bi ₂ SeO ₇	
亚硒酸钡		BaSeO ₃	
十水合亚硒酸钠		Na ₂ SeO ₃ · 10H ₂ O	
碲酸钡		BaSeO ₄	
碲酸钾		K ₂ SeO ₄	
二甲基二硫代氨基甲酸硒	C ₁₀ H ₁₈ N ₂ S ₂ Se		
硫化硒	SeS ₂		
碲化砷	As ₂ Se ₃		
碲铁合金	FeSe		

Product 产品		
碲 Tellurium	高纯碲	Te
	碲化镉	CdTe
	碲化铋	ZnTe
	碲化铋	Bi ₂ Te ₃
	碲化铜	CuTe
	碲化锗	GeTe
	碲化铅	PbTe
	碲化锡	SnTe
	碲化镓	GaTe
	碲化铟	In ₂ Te ₃
	碲化铋	Sb ₂ Te ₃
	氧化碲	TeO ₂
	碲酸	H ₆ TeO ₆
	TDEC	C ₂₀ H ₁₆ N ₄ S ₂ Te
	碲化亚铜	Cu ₂ Te
	碲化汞	HgTe
碲铜汞	HgCdTe	
碲化锰	MnTe	
钴 Cobalt	三氧化二钴	Co ₂ O ₃
	四氧化三钴	Co ₃ O ₄
	硫酸钴	CoSO ₄ · 7H ₂ O
	一水硫酸钴	CoSO ₄ · H ₂ O
	氧化钴	CoO
	氢氧化钴	Co(OH) ₂
锡 Tin	高纯锡	Sn
	二氧化锡	SnO ₂
硼 Boron	氧化硼	B ₂ O ₃
锌 Zinc	高纯锌	Zn

BU 业务单元	Product 产品	
红外事业部 IR BU	锗毛坯、锗晶片	Ge blanks, lens
	碲化铋	ZnSe
	碲化铋	ZnS
	红外级别碲化铋	GaAs for Optical Grade
	碲	Si
	碲系玻璃	Chalcogenide infrared glass
半导体事业部 CS BU	LYSO晶体	LYSO Crystals
	CZT晶体	CZT Crystals
	BGO晶体用前驱体材料	BGO Crystal Precursor Materials
	碲衬底	Ge Substrate
	碲化铋衬底	GaAs Substrate
	碲化铋衬底	InP Substrate
碲化铋/碲化铋基外延片	GaAs/InP based EPI wafer	
940 nm VCSEL单管/阵列	940 nm VCSEL Single/Array	
850 nm VCSEL单管/阵列	850 nm VCSEL Single/Array	
三甲基碲	Ga(CH ₃) ₃	
三乙基碲	Ga(C ₂ H ₅) ₃	
三甲基铝	Al(CH ₃) ₃	
三甲基铟	In(CH ₃) ₃	

* Forms: Powder, Cylinders, Shots, Lumps, Granules, Ingots, Balls, Sticks, Sheets, Liquid(bottle), etc
形状:粉末、圆柱状、块状、杆状、粒状、锭状、球状、棒状、片状、液状(瓶)等

BU 业务单元	Product 产品	
溅射靶材 Sputtering Targets	氧化铟锡靶	ITO
	氧化铟镓锌靶	IGZO
	碲化铋靶	CdTe
	铜铟镓靶	CIGS
	碲化铋靶	CdZnTe
	碲化铋靶	CdS
	碲化铋靶	In ₂ Se ₃
	碲化铋靶	In ₂ S ₃
	碲化铋靶	ZnTe
	氧化铋靶	NbOx
	铋靶	BeCu
	钒靶	V
	碲靶	ZrY
	铝靶	Al
	铝靶	AlSc
	碲靶	CoTaZr
	碲靶	Cr
	碲靶	CrCo
	铜靶	Cu
	铜铟镓靶	CuGa
	铜铟镓靶	CIG
	掺碳碲铋靶	C-GST
	碲靶	In
	碲靶	InSn
碲靶	Nb	
碲靶	Ni	
碲靶	Sn	
碲靶	Si	
碲靶	SiAl	
碲靶	Ta	
碲靶	Ti	
碲靶	WTi	
碲靶	Ag	
碲靶	Au	
碲靶	Pt	
碲靶	Ru	
碲靶	NiPt	
蒸发材料 Evaporation Materials	铝	Al
	铬	Cr
	铜	Cu
	锗	Ge
	铟	Hf
	铋	In
	镍	Ni
	硅	Si
	锡	Sn
	钛	Ti
氧化铝	Al ₂ O ₃	
氧化铟	HfO ₂	
氧化铟	ITO	
氧化铋	Nb ₂ O ₅	
氧化铋	Ti ₂ O ₃	
氧化铋	Ta ₂ O ₅	
碲化铋	CdSe	
碲化铋	ZnSe	
碲化铋	ZnS	
碲化铋	YbF ₃	
碲化铋	CeF ₃	
碲化铋	BaF ₂	
蒸发配件 Evaporation Accessories	蒸发舟材	Evaporation Boats
	电子束坩埚	E-Beam Crucibles

* Other products and purity requirements are available upon request
其他产品和纯度要求可根据要求提供



R&D CAPABILITIES

研发能力

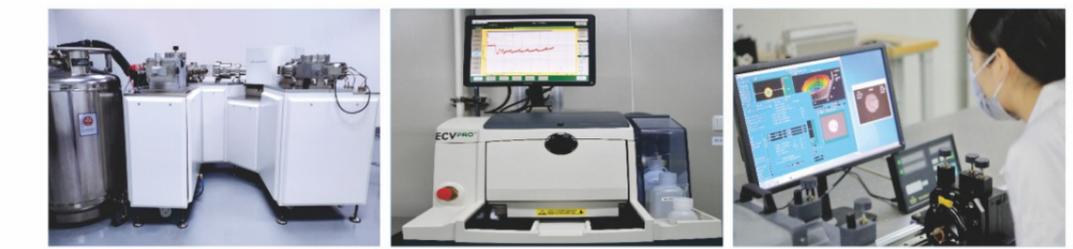
先导稀材不断改进生产工艺技术和开发新产品,为客户提供材料应用解决方案,我们引以为傲的资源包括:

Vital Materials pursues continuous improvement of its technology and develops new material solutions and products. We take great pride in our resources.



先导稀材致力于为快速增长的前沿科技领域提供定制化服务,包括分析测试、应用技术支持、代加工、材料回收及再利用、存货管理、新产品研发等,我们拥有专业化的人才团队,以成本优势和技术优势持续为客户创造价值。

Vital Materials is committed to providing customized solutions for the leading-edge, high-growth global markets, including analysis and testing, technical support, OEM, material recycling and reclamation, inventory management, R&D services, etc. Our specialized team constantly create value for customers with cost advantage and technology innovative advantage.



高纯技术 HIGH PURITY TECHNOLOGIES	<ul style="list-style-type: none"> 高纯金属的提纯技术 高纯电子气体的提纯技术 高纯试剂的提纯技术 高纯化合物的合成技术 	<ul style="list-style-type: none"> High purity metal purification High purity electronic gas purification High purity reagent purification High purity compound synthesis
晶体技术 CRYSTAL TECHNOLOGIES	<ul style="list-style-type: none"> 高纯多晶料的合成技术 晶体的生长技术 晶体的加工技术 晶体的应用研究 晶体生长设备开发 	<ul style="list-style-type: none"> High purity polycrystalline material synthesis Crystal growth Crystal processing Crystal application research Crystal growth equipment design
靶材技术 TARGET MATERIAL TECHNOLOGIES	<ul style="list-style-type: none"> 靶材用粉末的合成技术 超细粉末的处理及造粒技术 靶材的成型技术 靶材的烧结技术 高纯金属靶材熔铸及热处理技术 靶材的绑定及检测技术 	<ul style="list-style-type: none"> Powder synthesis Ultrafine powder processing and granulation Target molding Target sintering Metal target casting and heat treatment Target bonding and testing
纳米技术 NANOTECHNOLOGIES	<ul style="list-style-type: none"> 纳米材料合成技术 纳米材料的分散、形貌控制技术 纳米材料表面处理技术 纳米材料的应用研究 	<ul style="list-style-type: none"> Nano-material synthesis Dispersion and morphology control Surface treatment Application research
芯片技术 CHIP TECHNOLOGIES	<ul style="list-style-type: none"> 外延生长技术 芯片加工技术 	<ul style="list-style-type: none"> Epitaxial growth technology Chip processing technology
光学技术 OPTICAL TECHNOLOGIES	<ul style="list-style-type: none"> CNC加工技术 光学镀膜技术 低噪声、高频率和大面阵读出电路设计 高良率、大TCR和低应力MEMS结构设计和工艺制程 	<ul style="list-style-type: none"> CNC technology Optical coating technology Low noise, high frequency, and large area array readout circuit design High-yield, large TCR, and low-stress MEMS structure design and processing

GLOBAL PRESENCE

全球网络



高纯材料基地 (禾云工业区)
High Purity Materials Plant
(Heyun Industrial Park)



先进材料基地 (清远工业区)
Advanced Materials Plant
(Qingyuan Industrial Park)



稀有材料基地 (云龙工业区)
Rare Materials Plant
(Yunlong Industrial Park)



资源再生基地 (雄兴工业区)
Recycling Plant
(Xiongxing Industrial Park)



先导颜料 (天津) 有限公司 (颜料基地)
Vital Pigments (Tianjin) Co., Ltd
(Teda Industrial Park)



威科赛乐微电子股份有限公司 (芯片基地)
CS Microelectronics Co., Ltd
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先进材料基地 (广东清远-百嘉工业园)
Advanced Materials Production Plant (Qingyuan, Guangdong)
薄膜材料基地 (广东清远;安徽合肥)
Vital Thin Film Materials Production Plant (Qingyuan, Guangdong/Hefei, Anhui)
先导颜料 (天津) 有限公司 (颜料生产基地)
Vital Pigments (Tianjin) Co., Ltd (Pigments Plant)
红外光学基地-光智科技 (安徽省滁州市)
Infrared Optical Plant (Chuzhou, Anhui)
回收基地 (广东清远;湖南耒阳)
Recycling Plant (Qingyuan, Guangdong /
Leiyang, Hunan)

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