



先导科技集团有限公司
VITAL MATERIALS CO., LIMITED

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MATERIALS TECHNOLOGY COMPANY

先导科技集团有限公司
VITAL MATERIALS CO., LIMITED

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COMPANY PROFILE

公司简介

先导科技集团于1995年开始涉足稀土金属行业，2003年在清远正式成立(先导稀材)，是一家全球领先的专业从事稀土金属及其高端材料、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，拥有国家稀土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、设有独立的先导中央研究院。

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 high-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 Technology Group Central Research Institute.



行业地位 Core Competence

全球稀土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，也是全球知名太阳能生产商的战略合作伙伴，持续为全球客户提供业内领先的一体化解决方案。

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 leading suppliers of infrared materials, a key supplier of compound semiconductor substrates, and a strategic partner of the global PV enterprise, continuing to provide industry-leading integrated solutions to global customers.



全球网点:54
Global Networks: 54



国家:20个
Countries: 20



全球员工:15,000+
Employees: 15,000+

先导科技集团实践垂直一体化发展战略，聚焦战略性新兴产业，在稀土金属、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，产品广泛应用于半导体、微电子、人工智能、5G、光通讯、低空经济、量子技术、新能源、新型显示、医疗健康、汽车电子、航空航天、消费电子、精密光学等高成长行业。

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 semiconductors, microelectronics, artificial intelligence, 5G, optical communications, low-altitude economy, quantum technology, new energy, new-type displays, healthcare, automotive electronics, aerospace, consumer electronics, precision optics, and other industries.

先导科技集团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

VITAL 03

- 在广州开发区设立工厂
The Beginning of Vital Materials
- 正式成立广东先导稀材股份有限公司
Established Vital Materials Co., Ltd.
- 成立高新材料基地
Established High-tech Material Base

1995-2010



- 禾云云龙厂区建立(稀散金属深加工)
Established Yunlong Industrial Park (Comprehensive Processing of Rare Metals)
- 成立广东先导先进材料股份有限公司
Established Vital Advanced Materials Co., Ltd.
- 收购卡佩勒颜料(天津)有限公司-环保颜料业务
Acquisition of Environmental Pigment Business From Cappelle Pigments (Tianjin) Ltd.
- 与优美科在清远合资成立ITO工厂
JV With Umicore to Build ITO Plant in Qingyuan
- 全资收购优美科ITO业务
Bought Out Umicore's Share in ITO Plant

2011-2017



- 成立威科赛乐微电子股份有限公司
Established CS Microelectronic Co., Ltd.
- 收购贺利氏(新加坡)磁存储靶材工厂-磁存储靶材业务
Acquisition of Magnetic Storage Business from Heraeus Singapore Facilities
- 收购湖南诚元有色金属有限公司-稀有金属的循环综合回收业务
Acquisition of Comprehensive Recycling Business of Rare Metals from Hunan Chengyuan Non-ferrous Metal Co., Ltd.
- 收购西班牙Orrion Chemicals Bischem, S. L.-原料药业务
Acquisition of Bismuth Chemical Production Business from Orrion Chemicals Bischem, S. L.
- 收购韩国LANXESS公司-MO源业务
Acquisition of MO Sources Business From Lanxess

2018-2019



- 收购德国FHR公司-真空镀膜设备业务
Acquisition of Vacuum Coating Equipment Business From FHR Anlagenbau GmbH
- 收购三星康宁先进玻璃有限公司-陶瓷靶材业务
Acquisition of Ceramic Target Business From Samsung Corning Advanced Glass, LLC.
- 收购PPM公司-复杂材料的加工回收业务
Acquisition of Processing and Recycling Business of Various Complex Materials From PPM Pure Metals GmbH
- 成立东莞先导先进科技有限公司
Established Dongguan Vital-Pioneer Technology Co., Ltd.
- 成立江苏先导电子科技有限公司
Established Jiangsu Vital Micro-electronics Technology Co., Ltd.

2020-2021



- 先导电子科技(原先导薄膜)完成A、B、C三轮融资
Series A, B and C founding rounds being finished by Vital Electronic Technology (formerly Vital Thin Film)
- 正式投产基地(莱阳、衢州、徐州)
In-Production Bases (Leiyang, Quzhou, Xuzhou)
- 收购5Nplus比利时工厂-回收及提纯业务
Acquisition of Recycling and Refinery Business From 5N PLUS INC.
- 成立Vital & FHR North America LLC.
Establishment of Vital & FHR North America LLC.
- 收购江苏扬子催化剂有限公司
Acquisition of Jiangsu Yangzi Catalyst Co., Ltd.
- 收购奥泰医疗系统有限责任公司
Acquisition of AllTech Medical Systems, LLC.
- 成立先导赛翡(重庆)半导体有限公司
Established Vital Sofine Semiconductor Co., Ltd.

2022-2024



- 控股万业企业(现更名为先导基电)
Being the holding company of Wanye Enterprises Co., Ltd. (now renamed Vital Deeptech)
- 先导基电收购伍丰科学仪器有限公司
Acquisition of Wufeng Scientific Instrument Co., Ltd. by Vital Deeptech
- 先导基电收购本原纳米仪器有限公司
Acquisition of Being Nano-Instruments Co., Ltd. by Vital Deeptech
- 成立安徽先导极星科技有限公司
Established Anhui Vital PoleStar Xtreme Hemt Technology Co., Ltd.
- 正式投产基地(荆州、德州)
In-Production Bases (Jinzhou, Dezhou)
- 在建基地(广州、佛山、衢州、淮北等)
Bases Under Construction (Guangzhou, Foshan, Quzhou, Huaibei, etc.)

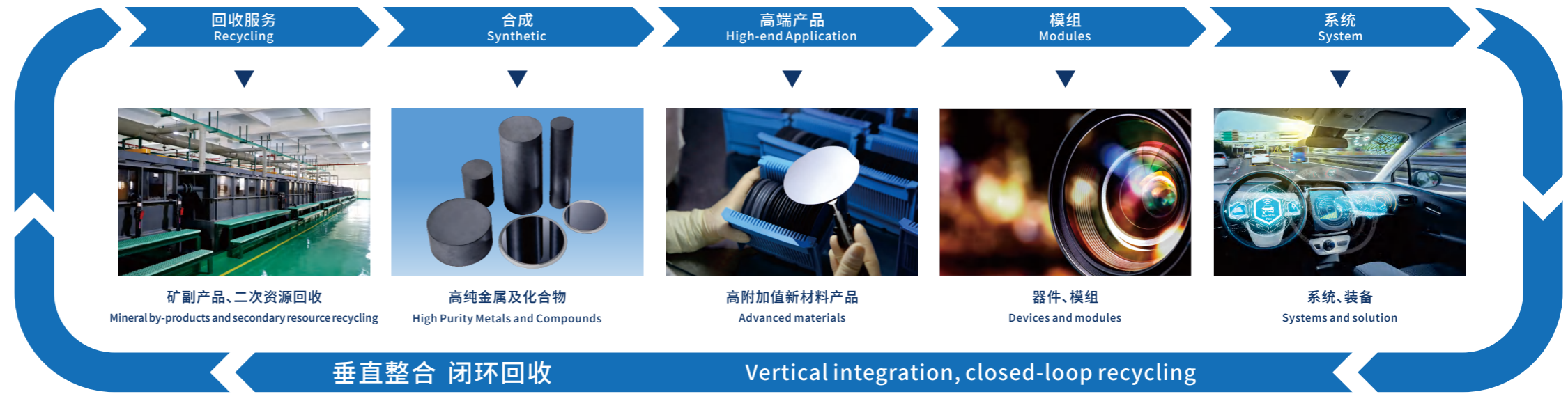
2025-2026



VITAL 04

INDUSTRIAL CHAIN

产业链



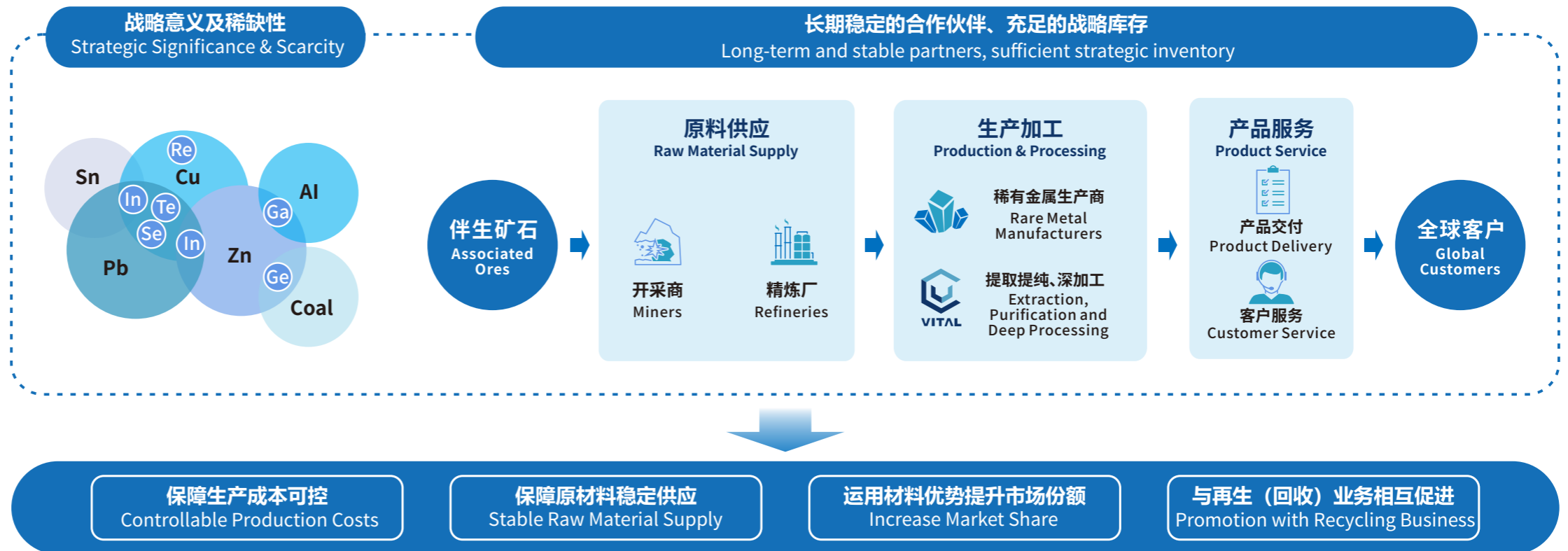
SUPPLY CHAIN

供应链

· 先导科技集团拥有全球独一无二的稀有金属“移动矿山”
Vital Materials possesses a unique global "Mobile Mine" of rare metals.

· 先导科技集团具备材料上的优势，全球化布局帮助先导构建了高韧性的产业链体系，与几乎所有的开采商、精炼厂以及稀有金属生产商保持着长期的合作关系

With material advantages and global presence, Vital Materials has built a stable industrial chain system, maintaining long-term cooperative relationships with almost all miners, refineries and rare metal producers.



COMPANY VISION

企业愿景

VITAL

VITAL 07



成为光电子技术
全球引领者

To Be a Global Leader in
Photonics Innovation

COMPANY STRATEGY

公司战略

- 全球布局
- 垂直一体化
- 聚焦稀散金属, 提供专业解决方案
- 成为首选的闭环回收服务商
- 专注于半导体、医疗、科学仪器、光伏、LED、红外、激光、5G、光通讯、显示、微电子等领域

- Global Presence
- Vertical Integration
- Specialize in Rare Metals, Providing Comprehensive Solutions
- Be the Preferred Recycling Partner
- Focus on High-Tech Industries Including Semiconductor, Healthcare, Scientific Instruments, PV, LED, Infrared, Laser, 5G, Optical Communication, Display, Microelectronics, and Much More

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

- IATF16949汽车质量管理体系
- IATF16949 Automobile Quality Management Systems

VITAL 08

ELECTRONIC TECHNOLOGY BUSINESS UNIT

电子科技事业部

电子科技事业部致力于真空镀膜材料和真空镀膜设备的研发、生产、销售和回收。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，被广泛应用于新型显示、光伏、半导体、汽车电子、精密光学、数据存储、玻璃等领域。我们在广东清远、安徽合肥、江苏徐州、山东淄博、云南昆明、韩国、美国、德国、新加坡等地均有研发制造基地。

Electronic Technology Business Unit devotes to R&D, producing, sales, and recycling of sputtering targets and evaporation materials for physical vapor deposition (PVD), as well as vacuum coating equipment. Depending on the materials, a wide variety of products in different forms and shapes are available. Our materials products include high-purity metals, alloys, precious metals, and ceramic materials, are widely used in the new-type displays, photovoltaics, semiconductors, automotive electronics, precision optics, data storage, glass, and other industries. We also have R & D and manufacturing bases in China, South Korea, the United States, Germany, and Singapore.

产品&应用 Product & Application

溅射靶材 Sputter Targets

溅射靶材主要用于真空镀膜设备中，通过物理气相沉积 (PVD) 在基片上涂覆薄膜层，以增加新的功能或创建微小的连接，如薄膜晶体管 (TFT)。

Sputter Targets are mainly used in Vacuum Coating Equipment to coat thin films by Physical Vapor Deposition (PVD) on a substrate to add new functions or create micro-electronic connections and functions as Thin Film Transistors (TFT).

光伏类靶材 PV Targets

ITO	VTTO	VTZO	CdTe
CIGS	CZT	Cu	NiO

半导体靶材 Semiconductor Targets

AlCu	Al	Ti	Ta	Cu	CuAl
CuMn	NiPt	Ni	Co	TiAl	W
WSi	WTi	Al ₂ O ₃	NiV	Ag	Ru

*IC类靶材 IC Targets

AlSc	PZT	LNO	V	ZrVFe	GeSbTe
Mo	Nb	Ge	Si	Ru	Au
Pt	Cr				

*MEMS类靶材 MEMS Targets

显示类靶材 Display Targets

ITO	IGZO	IZO	P-ITO	Cu
Al	Ti	Mo	Ag	

蒸发材料 Evaporation Materials

SrAlOx	Ti ₂ O ₅	Ta ₂ O ₅	YbF ₃	LiF
Yb	Mg	Ti	Ni	Au
Ag	ITO	ICO	IZO	IWO

蒸发材料 Evaporation Materials

我们为各行业客户提供各种材料所制成的高品质蒸发材料，同时根据客户的具体应用为客户提供最佳的解决方案。

我们的产品具有高纯度、高熔炼性能、在预熔和加工过程中飞溅率低等优点，能有效避免镀膜缺陷，提高镀膜良率。我们的产品范围包括贵金属、高纯金属、金属合金、氟化物、氧化物和硫化物等，可根据需要制成颗粒、圆片、球状等形状。

We provide a wide range of high-quality evaporation materials offering the best solution for any individual application. High-purity, optimized melting properties as well as low spitting during pre-melt and processing allows coating complex layer stacks with low defects and high yield.

Our products range includes precious metals, high-purity metals, metal alloys, fluorides, oxides and sulphides in a wide variety of shapes and geometries of granules, tablets, shots or disks.



真空镀膜设备 Vacuum Coating Equipment

我们致力于构建面向下一代薄膜光伏的系统化技术平台，涵盖薄膜材料开发、真空工艺装备、溅射靶材制造及全流程技术服务。公司重点聚焦钙钛矿单结及叠层电池技术，能够提供从材料设计、设备开发到工艺集成与回收利用的一体化解决方案。

在业务层面，我们不仅提供薄膜沉积设备的设计与制造，还支持镀膜打样、膜系设计优化及量产工艺开发，帮助客户实现从实验室到产业化的快速落地。相关技术方案广泛应用于薄膜太阳能电池 (包括钙钛矿单结与叠层)、新型显示、汽车电子、MEMS传感器、光学器件、滤波器及功能性装饰等领域。

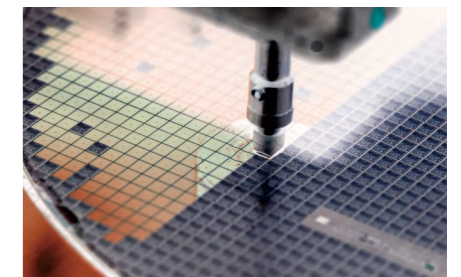
We are committed to building an integrated technology platform for next-generation thin-film applications, covering thin-film materials development, vacuum process equipment, sputtering target manufacturing, and end-to-end technical services. With a strong focus on both perovskite single-junction and tandem solar cells, we provide comprehensive solutions spanning materials design, equipment engineering, process integration, and recycling technologies.

Our core business includes the design and manufacturing of advanced thin-film deposition equipment, as well as value-added services such as thin-film coating demo, layer stack engineering, and scale-up process development. These capabilities enable our customers to accelerate the transition from R&D to high-volume manufacturing. Our solutions are widely applied across thin-film photovoltaics (including perovskite single-junction and tandem), advanced displays, automotive electronics, MEMS sensors, optics, RF filters (BAW/SAW), and decorative coatings.

客户服务 Customer Service

我们可以为您提供售前和售后工艺调试及技术支持、金属全产业链闭环服务、靶材高利用率解决方案、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, 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.



OPTO-ELECTRONICS TECHNOLOGY BUSINESS UNIT

光电子科技事业部

光电子科技事业部主要聚焦红外材料、红外镜头、红外探测器、红外机芯和组件、红外整机及系统、激光器件与系统的研发、生产和销售等业务，具备从“材料生长、芯片设计、器件制备到系统集成”的全产业链规模化生产能力，可提供优质的光电产品和解决方案。事业部的各类产品和方案被广泛应用于医疗健康、航空航天、低空经济、汽车电子、能源冶金、新能源、公共民生、安防防控、工业制造、智能楼宇等领域。

Opto-electronics Technology Business Unit is dedicated to the R&D, production, and sales of infrared materials, lenses, detectors, modules for infrared thermal imagers, infrared systems, laser devices and systems. With our comprehensive capabilities spanning "material growth, chip design, device fabrication, and system integration," We deliver high-quality optoelectronic products and solutions. Our products are widely used in medical health, aerospace, low-altitude economy, automotive electronics, energy and metallurgy, new energy, public welfare, security and prevention, industrial manufacturing, intelligent buildings, and other industries.



产品&应用 Product & Application

红外材料 Infrared Materials

我们是国内领先的红外材料供应商，并且是全球少数可以生产和批量供应硒化锌 (ZnSe) 材料的供应商，具有自主知识产权的13N超高纯锗填补了国内空白。

As China's leading supplier of infrared materials, we are one of the few global suppliers capable of producing and supplying zinc selenide (ZnSe) materials in bulk. Our Ultra-high purity germanium can reach a purity of 13N.

Ge	ZnSe	ZnS	Chalcogenide glass
GaAs	GaSb	InSb	Si MgF ₂ CaF ₂

红外镜头 Infrared Lenses

我们已完成200多款红外镜头创新设计开发，可提供面向红外领域所需要的各类光学镜头和定制化研发设计与生产服务。

With over 200 innovative infrared lens designs and developments, we offer a comprehensive range of optical lenses for the infrared field, and customized R&D production services.

消热差镜头 Athermalized Lens Assemblies	电动调焦镜头 Electric Focus Lens Assemblies
手动调焦镜头 Manual Focus Lens Assemblies	连续变焦镜头 Continuous Zoom Lens Assemblies

*全系列焦距可选 Full Range Optional Focal Length

红外器件 Infrared Modules

我们可提供多种品类的制冷和非制冷红外探测器，已建设8英寸硅基MEMS红外探测器芯片生产线和中波MCT、InSb和长波T2SL红外制冷探测器芯片生产线，掌握了MEMS芯片设计和制造工艺技术，金属、陶瓷和晶圆级封装技术。

We supply a diverse range of cooled and uncooled infrared detectors. With our established 8-inch silicon-based MEMS infrared detector chip production line and mid-wave MCT, InSb, and long-wave T2SL infrared cooled detector chip production line, we have the expertise in MEMS chip design and manufacturing processes, as well as metal, ceramic, and wafer-level packaging technologies.

我们可提供体积小、探测灵敏、超低功耗、多种接口的各类制冷或非制冷红外热成像机芯和组件，有320x256、384x288和640x512等主流分辨率可供选择，针对机器人、无人机行业开发了多种集成用红外机芯。

We offer a wide range of compact, high-sensitivity, ultra-low power consumption infrared thermal modules with various interfaces, including mainstream resolutions such as 320x256, 384x288, and 640x512. We also provide a variety of thermal modules specifically designed for robot, drone industries.

制冷探测器 Cooled Infrared Detector	非制冷探测器 Uncooled Infrared Detector
制冷机芯 Cooled Infrared Camera Core	非制冷机芯模组 Uncooled Infrared Camera Core

红外整机和系统 Thermal Infrared Systems

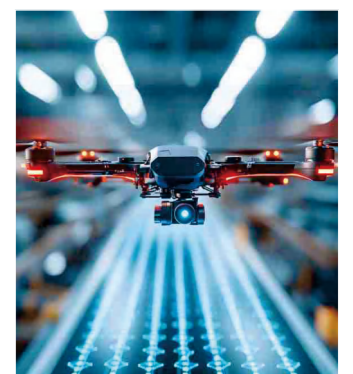
我们可为终端用户提供集成红外热成像组件、操控系统、显示系统、存储系统、云台系统等完整的解决方案，包括但不限于OEM、ODM以及整体系统交付。针对不同行业应用开发了户外、安防、工业测温、光电吊舱、气体检测等系列产品。

We provide comprehensive solutions for end-users, integrating infrared thermal imaging components, control systems, display systems, storage systems, and pan-tilt systems. Our solutions cover OEM, ODM, and complete system delivery. We have developed a range of products for various industries, including outdoor applications, security, industrial temperature measurement, airborne pods, and gas detection.

激光器件与系统 Laser Optical Components & Systems

我们致力于各类激光器及激光元器件的生产、研发和销售。包括各类半导体激光器、各种固体激光器和光纤激光器，如各种微型化激光模组、光纤耦合激光器、脉冲激光器、皮秒激光器、飞秒激光器等。产品被广泛应用于金属材料加工、金刚石、碳化硅等硬脆材料加工、激光医疗等领域。

We focus on R&D and production of various laser optical components, as well as laser modules and systems, which include various types of semiconductor lasers, solid-state lasers and fiber lasers, such as miniaturized laser modules, fiber-coupled lasers, pulsed lasers, picosecond lasers, femtosecond lasers, etc. Our products are applied in metal material processing, hard and brittle material processing such as diamond and silicon carbide, and laser medicine.



SEMICONDUCTOR TECHNOLOGY BUSINESS UNIT

半导体科技事业部

半导体科技事业部专注于III-V化合物半导体材料及其外延片、芯片和模块、半导体零部件的研发、生产和销售等业务，产品被广泛应用于LED、Mini/Micro LED、3D传感、面部识别、无人驾驶、AR/VR、5G、光通讯、光伏、量子信息技术、航空航天、半导体制造等多个领域。

Semiconductor Technology Business Unit focuses on the research, development, production, and sales of III-V compound semiconductor materials, epitaxial wafers, chips, modules, and semiconductor components. Our products are widely used in various fields, including LED, Mini/Micro LED, 3D sensing, facial recognition, autonomous driving, AR/VR, 5G, optical communication, photovoltaics, quantum information technology, aerospace, semiconductor manufacturing.

产品&应用 Product & Application

高纯材料 High Purity Materials

高纯材料具有纯度高、性能优异、应用广泛等特点，在电子、半导体、光伏、化工、医药、航空航天等领域有着重要作用，这些高纯材料可用于晶体生长、CVD工艺、PVD工艺、MBE技术等先进工艺中。

High-purity materials have the characteristics of high purity, excellent performance, and wide applications, and are of significant importance in the fields of electronics, semiconductors, photovoltaics, chemistry, medicine, aerospace, etc. These high-purity materials can be used in advanced technologies such as crystal growth, Chemical Vapor Deposition (CVD) processes, Physical Vapor Deposition (PVD) processes, and Molecular Beam Epitaxy (MBE) technology, etc.

高纯金属 High Purity Metals

Sb	As	Ga	Cu	In	P
Se	Te	Zn	Al	B	Be
Bi	Cd	Ge	Pb	S	Sn

MBE源 (6N+) MBE Sources

Al	B	Be	Sb	As	Ga
In	P	S	Te	Sn	Zn

MO源 MO Sources

TMA	TMG	TEG
TMI	CP ₂ Mg	GaCl ₃

电子特气 Electronic Gases

AsH ₃	PH ₃	GeH ₄	H ₂ Se
B ₂ H ₆	SiH ₄	Nf ₃	BCl ₃

热解氮化硼 (PBN)

高纯度 (>99.995%) 陶瓷坩埚
High-purity (>99.995%) Ceramic Crucible

前驱体 Precursors

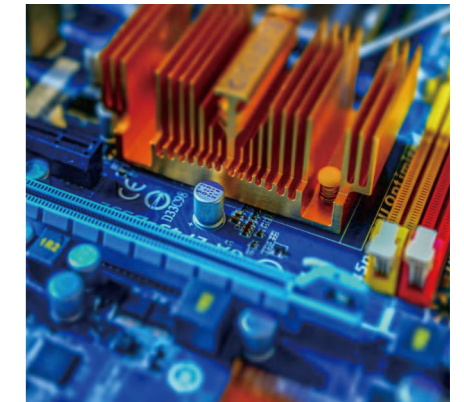
MoO ₂ Cl ₂	HfCl ₄	BDEAS
TEMAH	TEMAZ	TEOS

衬底和外延 Substrates And EPI

我们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、射频器件和功率器件领域都具有广泛的应用。

VITAL utilizes advanced high-precision wire cutting equipment and high-flatness grinding and polishing equipment to provide epitaxial manufacturers with high-quality EPI-Ready substrates through processes such as CMP polishing, cleaning, and packaging. These products have extensive applications in the fields of photoelectronic devices, RF devices, and power devices.

GaAs 2"-8"	InP 2"-6"	Ge 2"-8"	Sapphire 2"-8"
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Laser/PD 激光芯片和模块 Laser/PD Chips And Modules

我们可提供590nm-2.6μm波段激光器光源和探测器外延、芯片和封装模组产品。我司可根据外延结构、芯片版型以及针对不同行业、场景应用的结构设计和性能要求，从单晶衬底开始，到外延片生长、芯片流片、测试、可靠性的全套制程，均可按客户需求的规格提供定制化代工服务。

VITAL offers laser light sources and detectors epitaxy, chips, and packaged modules in the 590nm-2.6μm wavelength range. We offer end-to-end customized OEM services that cover the entire process, starting from single crystal substrates to epitaxial growth, chip fabrication, testing, and reliability characterization. Our services are tailored to meet the specific requirements of our customers, encompassing epitaxy structure, chip design, and performance specifications for various industries and applications.

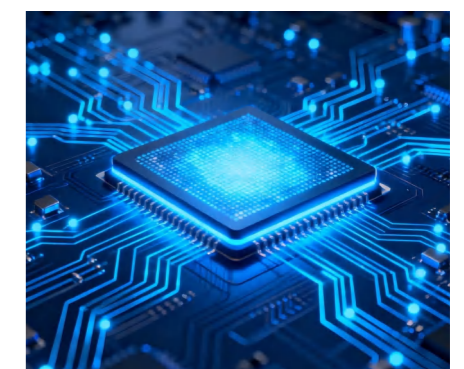
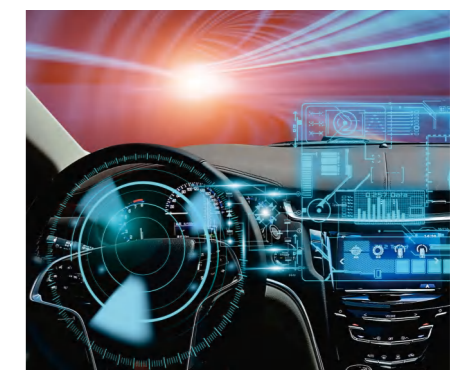
590nm/620nm/660nm/680nm/76Xnm/795nm/808nm/850nm/905nm/915nm/940nm/980nm/1060nm GaAs based Laser/MicroLED
1310nm/1550nm InP based Laser
1310nm/1550nm/1654nm/0.4-1.7μm/0.9-1.7μm/0.9-2.6μm InP based PIN/APD/SPAD



半导体零部件 Semiconductor Components

我们为您提供半导体设备的核心零部件，包括但不限于质量流量控制器(MFC)、喷淋头、加热器、腔体、静电卡盘、碳化硅部件、特种陶瓷制品、射频电源、真空泵和阀门、波纹管、EPD-OES光谱仪、非接触辐射高温计等，此外我们还可提供专业的管路解决方案。

We design and manufacture key components for semiconductor equipment, including showerheads, heaters, chambers, ESC, silicon carbide components, specialty ceramics, RF power supplies, vacuum pumps & valves, bellows, EPD-OES spectrometers, non-contact radiation pyrometers, and integrated solutions for gas delivery systems.



MEDICAL TECHNOLOGY BUSINESS UNIT

医疗科技事业部

医疗科技事业部深耕医学影像领域，以AI技术为核心，打造从原材料、元器件、系统部件到医疗装备整机的全产业链，产品被广泛应用于医疗影像、临床诊断、医学科研等领域。

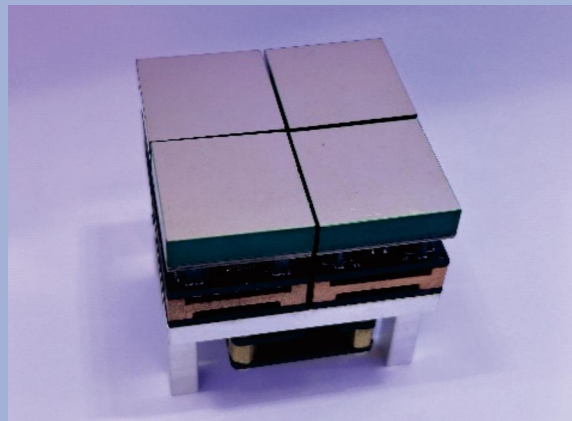
Medical Technology Business Unit is dedicated to the field of medical imaging, leveraging AI technology to create a full-industry chain from raw materials, components, system components, to medical equipment. Our products are widely used in medical imaging, clinical diagnosis, medical researches.

产品&应用 Product & Application

医疗影像元器件 Medical Imaging Components

医疗影像元器件全链自主生产，从CZT、BGO和LYSO晶体材料生长，到用于PCCT、PET和SPECT的探测器模块。

We have complete in-house production capabilities for medical imaging components, including the growth of CZT, BGO, and LYSO crystal materials, as well as detector modules for PCCT, PET, and SPECT.



CZT剂量探测器(模块) CZT Dose Detector (Modules)	
BGO阵列 BGO Array	LYSO阵列 LYSO Array
光子计数探测器 Photon Counting Detector	
CZT面阵/线阵探测器 CZT Planar/Linear Array Detector	
SPECT模组 SPECT Module	剂量手表 Radiation Dose Watches

医疗影像设备 Medical Imaging Equipment

磁共振成像系统(MR)	计算机断层扫描仪(CT)	
X射线系统(XR)	超声系统(US)	分子影像(MI)

• 磁共振成像系统(MR)

除常规医用磁共振外，我们还提供高端定制的磁体、线圈和MRI磁共振成像系统，满足您的个性化需求。

In addition to conventional medical MRI, we also offer high-end customized magnets, coils, and MRI magnetic resonance imaging systems to meet your needs.

ASTA Venus 1.5T MR	ASTA 1.5T MR
EchoStar Comfort 1.5T	EchoStar 1.5T

• X射线系统(XR)

「光明」系列DR—RadGlory 361 C型臂 C-arm—Dub

• 超声系统(US)

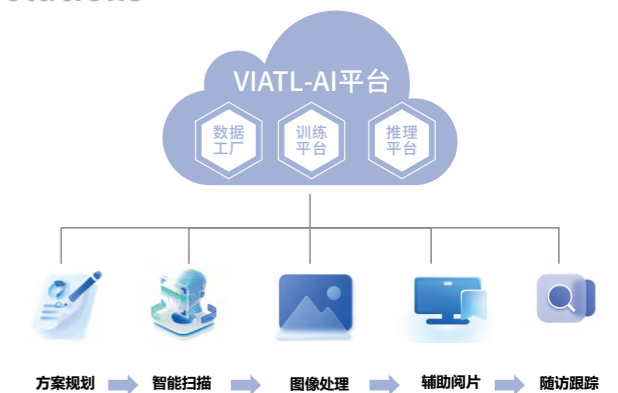
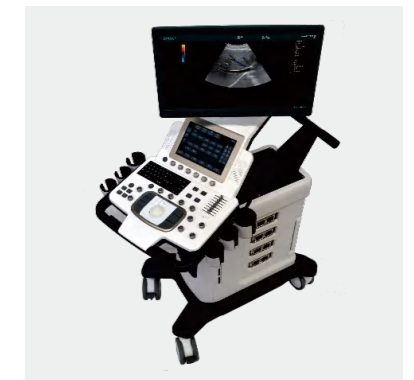
A8 | A8S | A8Exp 系列彩超为临床带来可靠准确的诊断支持

The A8 | A8S | A8Exp series color Doppler ultrasound systems provide reliable and accurate support for clinical diagnosis.

人工智能(一站式医学影像智能解决方案) AI-powered Medical Imaging Intelligent Solutions

VITAL-AI平台集数据工厂、训练平台、推理平台于一体，功能强大，操作便捷，为您提供方案规划、随访跟踪、智能扫描、图像处理、辅助阅片等全流程服务，助力医疗影像智能化升级。

The VITAL-AI platform integrates data factories, training platforms, and inference platforms to provide powerful and easy-to-use services for the entire process, including solution planning, follow-up tracking, intelligent scanning, image processing, and auxiliary image interpretation, to help medical imaging achieve intelligent upgrades.



MATERIALS TECHNOLOGY BUSINESS UNIT

材料科技事业部

材料科技事业部一直以来秉持可持续发展理念，产品包括稀散金属、合金、贵金属催化剂与化合物，事业部产品被广泛应用于医药、电子元件、核反应堆、光伏、新能源电池、冶金、石油炼化、绿色回收、颜料、涂料、农业等领域。

Materials Technology Business Unit supplies rare metals, alloys, noble metal catalysts and compounds and provides closed-loop metal recovery and recycling services for global customers. Our products are widely used in pharmaceuticals, electronic components, nuclear reactors, photovoltaics, new energy batteries, metallurgy, petroleum refining, green recycling, pigments, coatings, agriculture, and other industries.

产品与服务 Products and Services

回收 Recycling

- 加工和回收各种复杂物料 (包括有害材料)
- 为全球客户提供销售和回收解决方案
- Process and recycle a wide range of complex materials including hazardous materials
- Sales and recycling solutions to customers worldwide

催化剂 Catalysts

- 提供铂族贵金属催化剂
- 适用于加氢、重整、异构、脱氢/氧、脱硝/硫/砷等工艺的催化剂
- 非贵金属和贵金属催化剂的再生、还原、回收
- Great-performing platinum-group metals (PGMs) catalyst
- Adapting for hydrogenation, reforming, isomerization, dehydrogenation, deoxidation, denitrification, desulfurization, dearsenification and other processes
- Reduction, regeneration and recycling of non-metallic catalysts and noble metal catalysts



化学产品 Chemical Products

化学品业务主要包括稀散金属 (硒、碲、铋、铟、镓、锗、镉、钴、贵金属等)、合金、贵金属催化剂及化合物产品，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、焊料和石油化工等各类高新技术与战略新兴行业领域，以及提供废催化剂的再生、还原、回收服务。

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, noble metal catalysts 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, batteries, solder, petrochemicals and other high-tech and strategic emerging industries, and provide reduction, regeneration and recycling of catalysts.

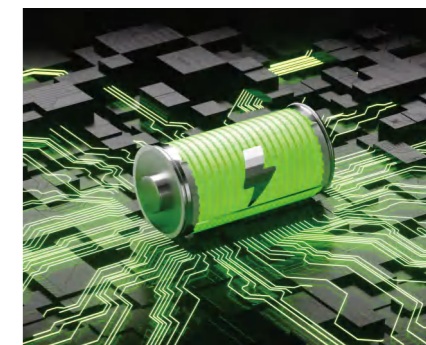
回收服务 Recycling Service

材料科技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散金属固体、浆料和溶液。

Materials Technology Business Unit uses advanced pyrometallurgical and hydrometallurgical processes, including side-blowing furnace technology, vacuum distillation technology, and advanced processes such as solvent extraction, ion exchange, and electrolysis to recover and refine a wide variety of rare-metal-containing solids, slurries, and solutions.

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散金属、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散金属、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 rare-metal and precious-metal containing materials. We also assist the downstream material/device enterprises in recycling a variety of rare metals and precious metals from scraps, other secondary resources, and end-of-life devices. Vital Materials recycles almost any type of rare metal containing waste.



SCIENTIFIC INSTRUMENTS BUSINESS UNIT

科学仪器事业部

科学仪器事业部聚焦质谱、色谱、光谱及原子力显微镜等高端科学仪器领域，掌握了核心器件、软件算法与系统集成等关键技术，构筑起覆盖核心部件、整机产品及应用开发的完整能力矩阵，为前沿科研与先进制造提供高端仪器支撑。

Scientific Instrument Business Unit specializes in high-end scientific instruments including mass spectrometer, chromatography instrument, spectroscopy, and atomic force microscopy. Mastering core technologies from key components and software algorithms to system integration, we have built a comprehensive capability matrix spanning core parts, complete instruments and application development, delivering robust scientific instrument support for cutting-edge scientific research and advanced manufacturing.



产品&应用 Product & Application

实验室分析仪器 Laboratory Analytic Instruments

我们提供质谱、色谱、光谱及原子力显微镜等实验室分析仪器，专注于整机设备和关键零部件的国产替代和差异化竞争，产品可广泛应用于半导体、高校科研院所、政府及第三方检测实验室等场景中物质的定量和定性分析。

We offer laboratory analytical instrumentation including mass spectrometer, chromatography instrument, spectroscopy, and atomic force microscopy. Focusing on localization initiatives and differentiated market positioning through systems and critical components/modules, our products are widely applied in semiconductors, academia, government, and third-party testing labs for qualitative and quantitative analysis.

精密量检测设备 Inspection & Metrology Instruments

我们提供桌面式椭圆仪、晶圆翘曲计等量检测设备，在生产中实现4到12英寸晶圆的膜厚、折射率、翘曲等关键量测，对晶圆厂及时发现问题、改善工艺、提高良率起到至关重要的作用。

Our desktop metrology instruments, including ellipsometers and wafer curvature analyzers, enable in-line critical parameter measurement of 4-12" wafers - film thickness, refractive index, and warpage - empowering semiconductor fabs to rapidly detect process deviations, refine manufacturing workflows, and improve yield.

原子力显微镜 Atomic Force Microscopy

原子力显微镜依托三十余年深厚技术沉淀与多项国家重点研发计划成果转化，核心技术自主研发，拥有完整知识产权。仪器集成AFM、LFM、STM等10余种技术，可对晶圆、细胞等多类型样品进行原位高精度检测与表征，满足前沿材料研究与生产的多维纳米表征需求。

Leveraging over 30 years of technological expertise and achievements from National Key R&D Programs, our Atomic Force Microscope (AFM) features proprietary core technologies and complete intellectual property rights. Integrating more than 10 techniques including AFM, LFM, and STM, the instrument enables in-situ, high-precision detection and characterization of diverse samples—from wafers to cells—meeting the multidimensional nanometric characterization demands of frontier materials research and production.



桌面椭圆仪 Desktop Ellipsometer

桌面椭圆仪基于高精度椭圆测量技术，兼容硅、砷化镓、磷化铟、锗、玻璃等多种基底，可对单层及多层膜进行厚度与折射率测量，灵活适配半导体、显示、光电子、光伏等领域的多元工艺。

Based on high-precision ellipsometry, the desktop system supports substrates such as Si, GaAs, InP, Ge, and glass. Capable of measuring thickness and refractive index for single/multi-layer films, our desktop ellipsometer flexibly adapts to diverse processes in semiconductor, display, optoelectronic, photovoltaic and so forth.



色谱分析仪器 Chromatography Instruments

色谱分析仪器依托近三十年技术积累，掌握完整自主知识产权，产品线涵盖超高效/高效液相色谱 (UHPLC/HPLC)、气相色谱 (GC)、凝胶色谱 (GPC)、三重四极杆液质联用仪 (LC-MS/MS)、四极杆气质联用仪 (GC-MS) 等整机与配套部件、耗材。仪器配置灵活，通用性强，充分满足半导体、生物医药、环境保护等领域的多样化分离与检测需求。

Backed by nearly three decades of technical expertise and complete independent IP, our chromatography portfolio spans UHPLC/HPLC, GC, gel permeation chromatograph (GPC), triple quadrupole LC-MS/MS and single quadrupole GC-MS, along with key components and consumables. Offering flexible configuration and exceptional versatility, our instruments meet diverse separation and detection needs in semiconductors, biopharma, and environmental protection.



质谱分析仪器 Mass Spectrometry Instruments

我们提供电感耦合等离子体质谱仪 (ICP-MS)、残余气体分析仪 (RGA) 等整机及配套耗材，为半导体超痕量元素分析、真空系统洁净度评估、工艺稳定性与生产质量管控，提供高精度、高稳定性的完整解决方案。

We offer complete instruments and supporting consumables-ICP-MS and residual gas analyzer (RGA) - delivering high-precision, high-stability solutions for ultra-trace elemental analysis, vacuum system cleanliness, and overall process stability and quality control in the semiconductor industry.



R&D CAPABILITIES

研发能力

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 • 超细粉体的处理及造粒技术 • 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

先导科技集团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.



先导中央研究院以“支持和赋能集团业务快速发展、开发前沿新技术和平台技术、提供技术整合和提供解决方案”为战略目标,聚焦高端材料、装备制造、微电子、光电子和可再生能源等研发领域,赋能集团新质生产力以及光电、光伏、医疗、化工、新材料、新能源、半导体等方面高质量发展。

Vital Technology Central Research Institute, focusing on research and development in high-end materials, equipment manufacturing, microelectronics, optoelectronics, and renewable energy, contributes to VITAL group's high-quality productivity and development in optoelectronics, photovoltaics, healthcare, chemicals, advanced materials, new energy, and semiconductors.



GLOBAL PRESENCE

全球网络



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



威科赛乐微电子股份有限公司 (芯片基地)
CS Microelectronics Co., Ltd.
(Gaofeng Park)



奥泰医疗系统有限责任公司
AllTech Medical Systems, LLC.



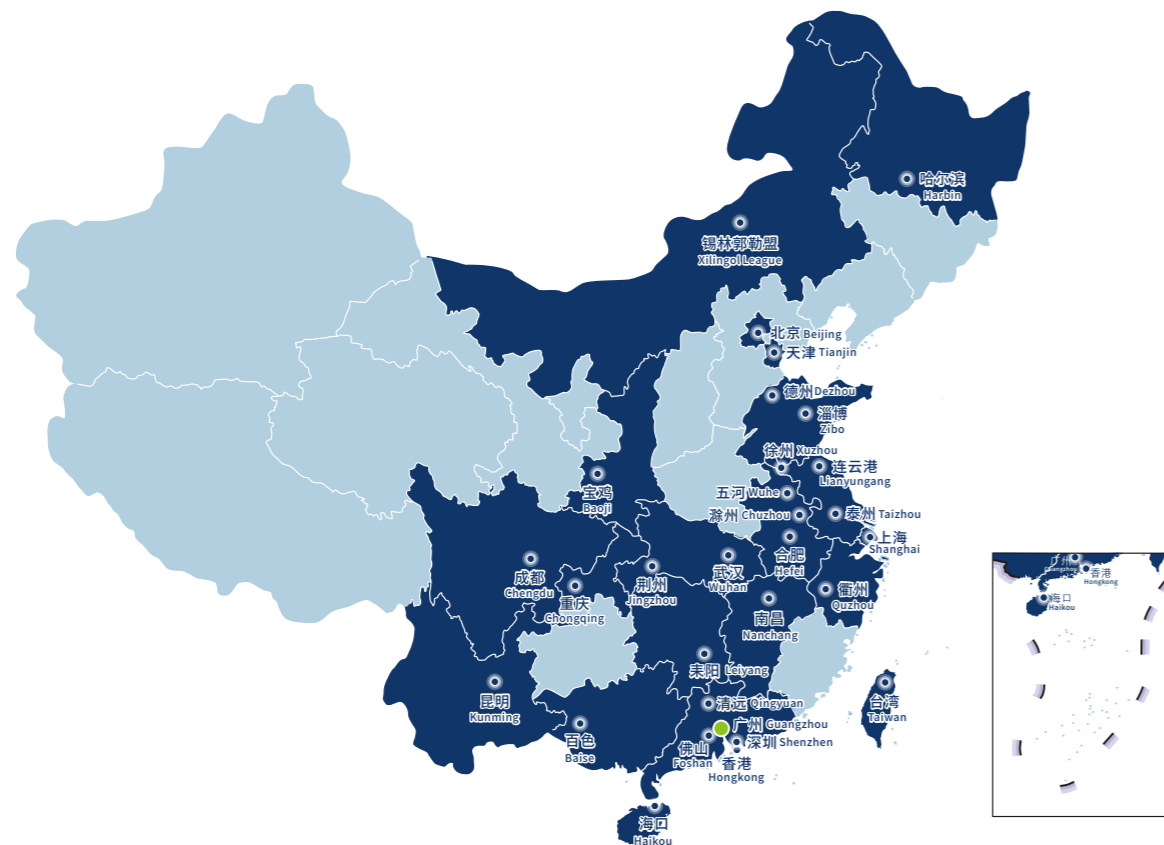
KV Materials Co., Ltd.



FHR Anlagenbau GmbH



Vital Chemicals USA, LLC.



中国总部 Head Office

先导科技集团有限公司 Vital Materials Co., Limited

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材料科技基地: 广东清远、湖北荆州、天津、湖南耒阳
Advanced Materials Production Plant (Qingyuan, Guangdong / Jingzhou, Hubei / Tianjin / Leiyang, Hunan)

薄膜材料基地: 广东清远、安徽合肥、山东淄博、江苏徐州、云南昆明、浙江衢州

Vital Thin Film Materials Production Plant (Qingyuan, Guangdong / Hefei, Anhui / Zibo, Shandong / Xuzhou, Jiangsu / Kunming, Yunnan / Quzhou, Zhejiang)

红外光学基地: 光智科技 (黑龙江哈尔滨)、安徽光智 (安徽滁州)
Infrared Optical Plant (Harbin, Heilongjiang / Chuzhou, Anhui)

激光产业基地: 山东德州、江苏连云港
Laser Industry Plant (Dezhou, Shandong / Lianyungang, Jiangsu)

芯片制造基地: 重庆、湖北武汉、山东淄博、安徽滁州、浙江衢州 / Zibo, Shandong / Chuzhou, Anhui / Quzhou, Zhejiang)

高端设备及科学仪器基地: 上海、江苏徐州、广东清远、广东广州、浙江衢州
High-end Equipment and Scientific Instrument Plant (Shanghai / Xuzhou, Jiangsu / Qingyuan, Guangdong / Guangzhou, Guangdong / Quzhou, Zhejiang)

医疗制造基地: 四川成都、浙江衢州
MedTech Equipment Manufacturing Plant (Chengdu, Sichuan / Quzhou, Zhejiang)

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广东先导元创精密科技有限公司
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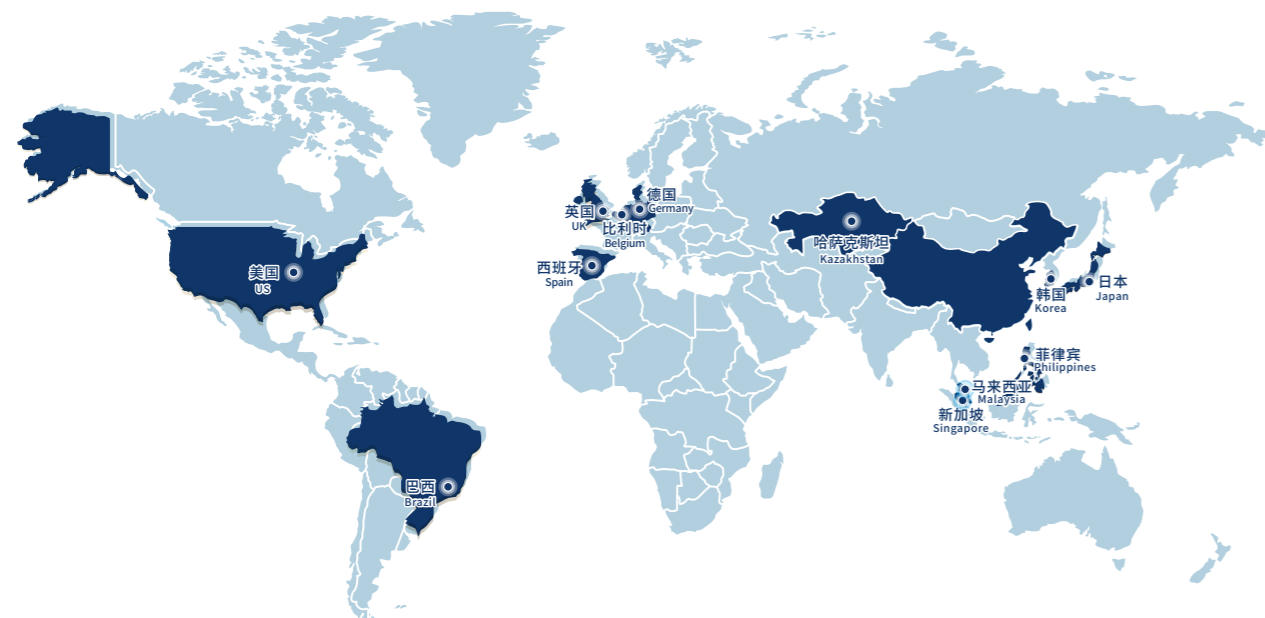
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