



股票简称：中科磁业

股票代码：301141



中者善思 科启未来

ZHONGKE, THINKING FOR THE FUTURE

致力于发展成为新一代消费电子和节能家电领域全球领先的
永磁材料应用方案提供商

Provider of permanent magnet material application solutions

www.dymagnet.com

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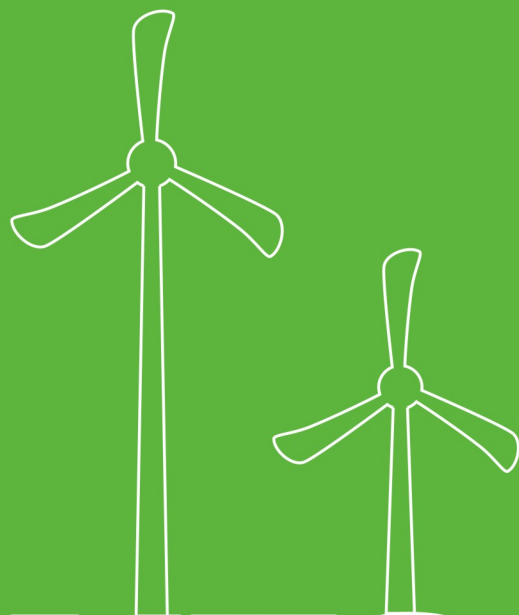


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Stock abbreviation: ZHONGKEMAGNET

Stock code: 301141

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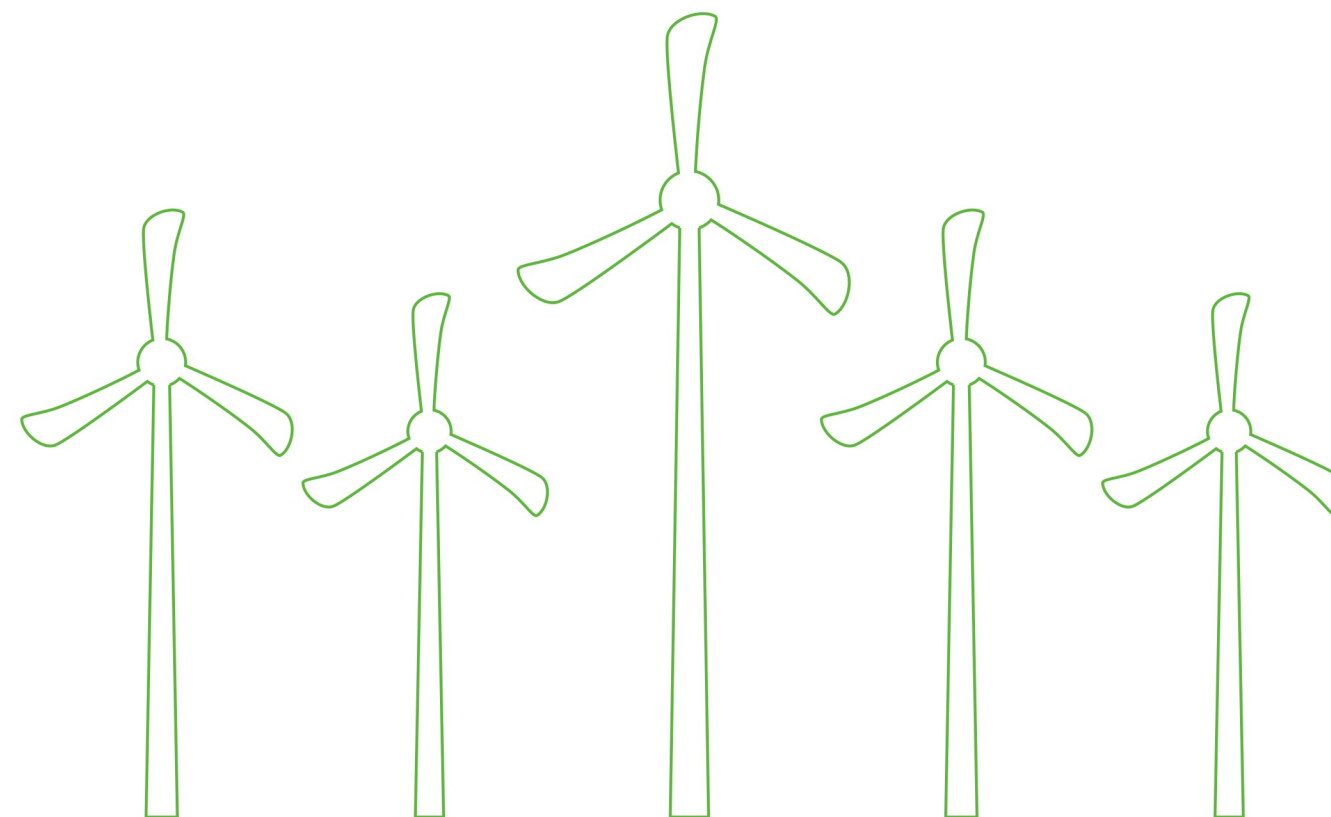
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ABOUT US

关于我们



若干项新产品获评省级工业新产品
Several new products have been rated as provincial-level industrial new products



省级新产品试制计划项目成果
Achievements of provincial-level new product trial production plan project



多项新产品达到国内或国际先进水平
Multiple new products have reached domestic or international advanced levels

公司是一家从事永磁材料研发、生产和销售的高新技术企业，能够同时生产烧结钕铁硼永磁材料、永磁铁氧体磁体两大类永磁材料，产品牌号齐全，公司定位于消费电子、节能家电等领域中高端市场，为下游众多全球知名企业提供优质的产品服务，已快速成长为国内重要的永磁材料生产商之一，赢得了良好的市场美誉度。

经过多年自主研发，公司已全面掌握了生产烧结钕铁硼永磁材料、永磁铁氧体磁体的核心技术。在烧结钕铁硼永磁材料领域，公司已建立起了高丰度稀土平衡应用技术体系、高性能烧结钕铁硼磁体制备工艺技术体系等多维度技术体系，产品具有优异的磁性能和高一致性；在永磁铁氧体磁体领域，公司生产采用了无钴/低钴等独有配方，使得配方成本显著下降，并通过不断改进优化生产工艺水平，使得产品在行业内具有较强竞争力。

公司研发团队经过长年不懈努力在永磁材料制备领域取得了多项技术突破，公司已取得授权的发明专利若干项、实用新型专利若干

项，公司已有“一种节能变频空调用 50UH 高性能磁钢”“一种用于汽车 ABS 电机传感器的超小方块磁体”“新能源汽车用高性能 42EH 磁钢”等若干项新产品获评省级工业新产品、省级新产品试制计划项目成果，其中多项新产品达到国内或国际先进水平。上述专利、研发成果保障了公司技术工艺的完整性和产品的多样性，形成了深厚的技术储备。

自设立以来，公司先后获评浙江省专利示范企业、浙江省创新型示范中小企业等荣誉称号，并入选2018年新建省级高新技术企业研发中心名单和2020年新认定省级企业研究院名单，参与项目获评2020年度浙江省科学技术进步奖二等奖。上述荣誉、奖项展现出公司较强的创新能力以及行业对公司创新发展的广泛认可。

公司主持起草了 T/ZZB 1525-2020《变频空调压缩机用高内禀矫顽力永磁钕铁硼》、T/ZZB 1566-2020《超薄扬声器用永磁铁氧体》两项团体标准。

The company is a high-tech enterprise engaged in the research and development, production, and sales of permanent magnet materials. It can simultaneously produce two categories of permanent magnet materials, sintered neodymium iron boron permanent magnet materials and permanent magnet ferrite magnets. The product grades are complete, and the company is positioned in the mid to high end markets of consumer electronics, energy-saving home appliances, and other fields. It provides high-quality product services to many globally renowned downstream enterprises and has rapidly grown into one of the important permanent magnet material manufacturers in China, Won a good market reputation.

After years of independent research and development, the company has fully mastered the core technology of producing sintered neodymium iron boron permanent magnet materials and permanent magnet ferrite magnets. In the field of sintered neodymium iron boron permanent magnet materials, the company has established a multi-dimensional technical system, including a high abundance rare earth balance application technology system and a high-performance sintered neodymium iron boron magnet preparation process technology system. The products have excellent magnetic properties and high consistency; In the field of permanent magnet ferrite magnets, the company adopts unique formulas such as cobalt free/low cobalt, which significantly reduces formula costs. Through continuous improvement and optimization of production process level, the product has strong competitiveness in the industry.

After years of unremitting efforts, the company's R&D team has achieved multiple technological breakthroughs in the field of permanent magnet material preparation. The company has obtained several authorized

invention patents and several utility model patents, The company has achieved several new products, including "a 50UH high-performance magnetic steel for energy-saving variable frequency air conditioning", "a super small square magnet for automotive ABS motor sensors", and "high-performance 42EH magnetic steel for new energy vehicles", which have been awarded the provincial industrial new product and provincial new product trial production plan project results. Many of these new products have reached domestic or international advanced levels. The above patents and research and development achievements ensure the integrity of the company's technological processes and product diversity, forming a deep technological reserve.

Since its establishment, the company has been awarded honorary titles such as Zhejiang Province Patent Demonstration Enterprise and Zhejiang Province Innovative Demonstration Small and Medium sized Enterprise, and has been selected for the list of newly established provincial-level high-tech enterprise research and development centers in 2018 and the list of newly recognized provincial-level enterprise research institutes in 2020. The participating projects have been awarded the second prize of Zhejiang Province Science and Technology Progress Award in 2020. The above honors and awards demonstrate the company's strong innovation ability and the industry's widespread recognition of the company's innovative development.

The company presided over the drafting of two group standards, T/ZZB 1525-2020 High Intrinsic Coercivity Permanent Magnet Nd-Fe-B for Variable Frequency Air Conditioning Compressor and T/ZZB 1566-2020 Permanent Magnet Ferrite for Ultra thin Speakers.



CORE VALUE

核心价值

中科磁业主要从事永磁材料的研发、生产和销售，是目前国内重要的永磁材料生产商之一。公司长期致力于服务国内外中高端客户，高度重视市场开发和品牌建设，依靠优良的品质、卓越的性能、优质的服务、优惠的价格赢取用户的满意，已获得市场的广泛认可，我们一直追求专业化发展道路，始终秉持“质量为先，客户为先”的原则，经过多年的自主研发和生产实践，已全面掌握了生产永磁材料的核心技术，用我们的专业化服务帮助客户创造更高的价值。

Zhongke is mainly engaged in the research and development, production, and sales of permanent magnet materials, and is currently one of the important manufacturers of permanent magnet materials in China. The company has long been committed to serving mid-to-high-end at customers at home and abroad, attaching great importance to market development and brand building. Relying on excellent quality, superior performance, high-quality service, and favorable price to satisfied with customers, which has been widely recognized by the market. We have always pursued a professional development path, always adhering to the principle of "Quality and customers come in first", and after years of independent research and development and production practice, We have fully mastered the core technology of producing permanent magnet materials and use our professional services to help customers create higher value.



我们的愿景
Our Vision

为世界提供绿色磁源
Providing a Green Magnetic Source
for the World

烧结钕铁硼永磁材料属于第三代稀土永磁材料，是精密电声器件、稀土永磁电机等当代制造业重要部件的关键电子材料，其普及应用符合我国的节能减排政策，对实现“碳达峰、碳中和”具有重要意义。

Sintered neodymium iron boron permanent magnet materials belong to the third generation of rare earth permanent magnet materials, and are key electronic materials for important components in contemporary manufacturing industries such as precision electroacoustic devices and rare earth permanent magnet motors. Their widespread application is in line with China's energy-saving and emission reduction policies, and is of great significance for achieving "carbon peaking and carbon neutrality".



我们的使命
Mission

创造价值与美好生活
Creating Value and a Better Life

促进特色资源新材料可持续发展。推动稀土等特色资源高质化利用，加强专用工艺和技术研发，促进新材料产品品质提升，加强新材料产业上下游协作配套。

Promote the sustainable development of characteristic resources and new materials. Promote the high-quality utilization of rare earth and other characteristic resources, strengthen the research and development of specialized processes and technologies, promote the quality improvement of new material products, and strengthen the upstream and downstream cooperation and support of the new material industry.



核心价值观
Core values

创新、协作、高效、发展
Innovation, collaboration,
efficiency, and development

促进特色资源新材料可持续发展。推动稀土等特色资源高质化利用，加强专用工艺和技术研发，促进新材料产品品质提升，加强新材料产业上下游协作配套。

Promote the sustainable development of characteristic resources and new materials. Promote the high-quality utilization of rare earth and other characteristic resources, strengthen the research and development of specialized processes and technologies, promote the quality improvement of new material products, and strengthen the upstream and downstream cooperation and support of the new material industry.



工作作风
style of work

坚毅拼搏，求真务实
Perseverance and hard
work, seeking truth and pragmatism

公司长期坚持以市场为导向，注重产品开发前的市场调研和客户需求分析，针对下游客户和市场需求开展研发与技术创新，并且能够最大化满足客户和市场的最新需求。

The company has long adhered to a market-oriented approach, focusing on market research and customer demand analysis before product development, conducting research and technological innovation targeting downstream customers and market demands, and being able to maximize meeting the latest needs of customers and the market.



STRATEGIC GUIDELINE

战略方针

稳步发展 做好服务

Developing steadily
with better service

确保节能电机磁瓦技术领先与领导地位；
确保智能音响高性能磁铁引领地位；
即时有效为客户提供优质服务。

Ensure the leading position of energy-saving motor magnet tile technology,
Ensure the leading position of intelligent audio high-performance magnet.
Provide customers with hi-quality service immediately and effectively.

技术引领 持续创新

Leading Technology,
Continuous innovation

形成5G通讯、智能穿戴、工业电机、
新能源汽车、机器人等领域核心竞争力。

Forming core competitiveness in fields such as 5G communication, intelligent wearables, industrial motors, new energy vehicles, robots, etc.

合作共赢 创造价值

Cooperation and win-win
Create Value

整合产业链资源，与合作伙伴优势互补，
优化产业生态，营造健康良性产业环境。

Integrate Industry Chain Resources and complement the advantages of partners;
Optimized industry ecology and create a healthy industrial environment.

HONOR&CERTIFICAT

荣誉资质

2018年

入选2018年新建省级高新技术企业研究开发中心名单
Selected for the list of newly established provincial-level high-tech enterprise research and development centers in 2018

2020年

2020年新认定省级企业研究院名单
List of Newly Recognized Provincial Enterprise Research Institutes in 2020

2020年

参与项目获评2020年度浙江省科学技术进步奖二等奖
Participated in the project and won the second prize of the 2020 Zhejiang Provincial Science and Technology Progress Award

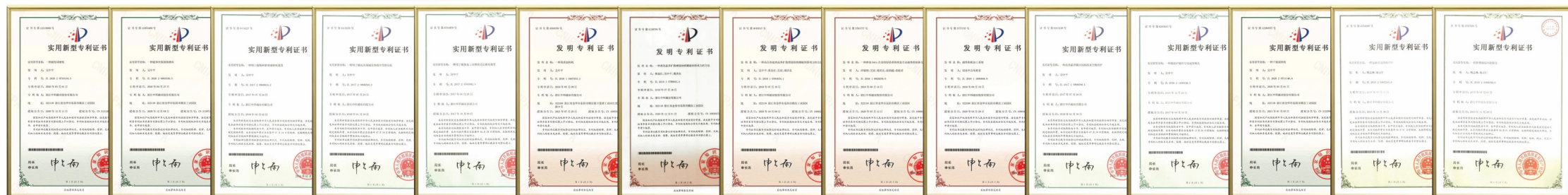
自设立以来，公司先后获评浙江省专利示范企业、浙江省创新型示范中小企业等荣誉称号，并入选2018年新建省级高新技术企业研究开发中心名单和2020年新认定省级企业研究院名单，参与项目获评2020年度浙江省科学技术进步奖二等奖。上述荣誉、奖项展现出公司较强的创新能力以及行业对公司创新发展的广泛认可。

Since its establishment, the company has been awarded honorary titles such as Zhejiang Province Patent Demonstration Enterprise and Zhejiang Province Innovative Demonstration Small and Medium sized Enterprise, and has been selected for the list of newly established provincial-level high-tech enterprise research and development centers in 2018 and the list of newly recognized provincial-level enterprise research institutes in 2020. The participating projects have been awarded the second prize of Zhejiang Province Science and Technology Progress Award in 2020. The above honors and awards demonstrate the company's strong innovation ability and the industry's widespread recognition of the company's innovative development.



中研发团队经过长年不懈努力在永磁材料制备领域取得了多项技术突破，已取得授权的发明专利、实用新型专利若干项，公司已有“一种节能变频空调用50UH高性能磁钢”“一种用于汽车ABS电机传感器的超小方块磁体”“新能源汽车用高性能42EH磁钢”等新产品获评省级工业新产品、省级新产品试制计划项目成果，其中若干项达到国际先进水平、若干项达到国内先进水平。上述专利、研发成果保障了公司技术工艺的完整性和产品的多样性，形成了深厚的技术储备。

After years of unremitting efforts, the R&D team of Zhongke has achieved multiple technological breakthroughs in the field of permanent magnet material preparation, and has obtained several authorized invention patents and utility model patents. The company has also won provincial industrial new products such as "a 50UH high-performance magnetic steel for energy-saving variable frequency air conditioning", "a super small block magnet for automotive ABS electrical sensors", and "high-performance 42EH magnetic steel for new energy vehicles". The results of the provincial-level new product trial production plan project, including several reaching international advanced levels and several reaching domestic advanced levels. The above patents and research and development achievements ensure the integrity of the company's technological processes and product diversity, forming a deep technological reserve.





COMPANY LISTING

公司上市

SERVICE STRENGTH

服务实力



1. 公司实力雄厚，生产经验丰富 Strong strength and rich production experience

公司生产的永磁材料可广泛应用于消费电子、节能家电、工业设备、汽车工业、风力发电、智能制造、电动工具等众多领域。

公司产品的牌号众多、规格齐全，已形成了较为完整的产品集群，可以满足下游市场的多元化需求。The permanent magnet materials produced can be widely used in various fields such as consumer electronics, energy-saving household appliances, industrial equipment, automotive industry, wind power generation, intelligent manufacturing, and electric tools.

There are numerous product brands and complete specifications, forming a relatively complete product cluster that can fully meet the diversified needs of downstream markets.



2. 强大的技术团队，自有研发工厂 A strong technical team, Own R&D factory

公司优越的地理位置和精干的管理团队，降低运输和人力成本；通过严控采购成本和实施高效的生产控制，降低生产成本；专业的R&D团队和技术服务团队，能持续提供性价比更高的新型产品。

公司产能十分充足，对原材料价格、品质和稳定供应的控制度高，为持续生产奠定基础；公司拥有完整的ERP系统、布局合理的销售仓储网络和高效的运行机制，产品储备充足，可以保质保量的承接应对任何规模的订单。

Superior geographical location and capable management team, reducing transportation and labor costs; Reduce production costs by strictly controlling procurement costs and implementing efficient production control; A professional R&D team and technical service team can continuously provide new products with higher cost-effectiveness.

The production capacity is very sufficient, with high control over raw material prices, quality, and stable supply, laying the foundation for sustained production; The company has a complete ERP system, a well-designed sales and warehousing network, and an efficient operating mechanism. With sufficient product reserves, it can handle orders of any size with quality and quantity guaranteed.



3. 精工产品，卓越品质 Precision products with excellent quality

优异稳定的产品质量。公司严格执行对原材料供应商筛选审核和来料测试、来料对比等程序；严苛的生产工艺设计和程序控制，使每个批次的产品更稳定和可追溯，获得高效率的生产控制；严格按照指标对每批次产品进行检测质量监控。

我们有自己的实验室和行业内先进的检测设备，保证产品质量，并且在出货前会每批次做内部测试，随货附测试检验报告。

Excellent and stable product quality. The company strictly implements procedures such as screening and reviewing raw material suppliers, conducting incoming material testing, and comparing incoming materials; Strict production process design and program control make each batch of products more stable and traceable, achieving efficient production control; Strictly monitor the quality of each batch of products according to the indicators.

We have our own laboratory and advanced testing equipment in the industry to ensure product quality. We also conduct internal testing on each batch before shipment, and attach testing and inspection reports to the goods.



4. 精英团队，贴心的售前售后服务 Elite team, attentive pre-sales and after-sales service

我们立足高品位及高端市场，产品符合国际标准，主要出口欧美、东南亚，韩国等国家。

公司一贯坚持无缝对接服务，精心打造了一支由技术骨干组成的售后服务团队，实行全天候跟踪服务，对客户进行及时的走访、交流和反馈，帮助客户解决问题，形成与客户定期交流会商机制，建立了客户档案系统，努力将售后服务做得更快速更贴心。

We are based on high-quality and high-end markets, and our products meet international standards. We mainly export to countries such as Europe, America, Southeast Asia, and South Korea.

We have always adhered to seamless and seamless service, carefully built an after-sales service team composed of technical backbone, implemented 24-hour tracking services, timely visits, exchanges, and feedback to customers, helped them solve problems, formed a regular communication and consultation mechanism with customers, and established a customer file system, striving to make after-sales service faster and more considerate.

DEVELOPMENT HISTORY

发展历程

2010年3月
 公司经浙江省东阳市市场监督管理局批准,于2010年3月22日成立,开展烧结钕铁硼业务
 The company was approved by the Market Supervision Administration of Dongyang City, Zhejiang Province and was established on March 22, 2010 to carry out the sintered neodymium iron boron business

2012年
 吸收合并东阳市中恒磁性材料有限公司,开展永磁铁氧体预烧料、磁钢、磁瓦业务
 Absorb and merge Dongyang Zhongheng Magnetic Materials Co., Ltd. to carry out the business of pre fired permanent magnet ferrite, magnetic steel, and magnetic tiles

2015年
 永磁铁氧体磁瓦生产线正式投产
 认定为国家级高新技术企业
 荣获浙江省科技型中小企业
 The production line of permanent magnet ferrite magnetic tiles has been officially put into operation and recognized as a national high-tech enterprise, and has been awarded the title of Zhejiang Science and Technology Small and Medium Enterprise

2018年
 公司进行首轮募资,增资1500万元,并整体变更为股份有限公司
 获评浙江省高新技术企业研究开发中心
 荣获浙江省创新型示范中小企业
 荣获浙江省专利示范企业
 荣获金华市信用管理示范企业
 The company conducted its first round of fundraising, increasing its capital by 15 million yuan and changing it into a joint stock limited company as a whole
 Awarded the title of Zhejiang High tech Enterprise Research and Development Center
 Awarded as an innovative demonstration small and medium-sized enterprise in Zhejiang Province
 Awarded as a patent demonstration enterprise in Zhejiang Province
 Awarded as a Credit Management Demonstration Enterprise in Jinhua City

2013年
 开始生产烧结钕铁硼毛胚产品,实现钕铁硼业务链条的积淀、延伸、扩展和整合
 Starting to produce sintered neodymium iron boron raw material products, achieving the accumulation, extension, expansion, and integration of the neodymium iron boron business chain

2017年
 钕铁硼产线扩能改造升级,年产能突破千吨级
 员工持股平台设立,公司增资1386万元
 获评金华市企业技术中心
 荣获金华市专利示范企业
 The neodymium iron boron production line has been expanded, renovated, and upgraded, with an annual production capacity exceeding 1000 tons
 Establishment of employee shareholding platform, with a capital increase of 13.86 million yuan for the company
 Awarded as Jinhua Enterprise Technology Center and awarded as Jinhua Patent Demonstration Enterprise

2018年
 获评浙江省高新技术企业研究开发中心
 荣获浙江省创新型示范中小企业
 荣获浙江省专利示范企业
 荣获金华市信用管理示范企业
 The company conducted its first round of fundraising, increasing its capital by 15 million yuan and changing it into a joint stock limited company as a whole
 Awarded the title of Zhejiang High tech Enterprise Research and Development Center
 Awarded as an innovative demonstration small and medium-sized enterprise in Zhejiang Province
 Awarded as a patent demonstration enterprise in Zhejiang Province
 Awarded as a Credit Management Demonstration Enterprise in Jinhua City

2022年
 荣获国家级专精特新“小巨人”企业/荣获浙江省“专精特新”中小企业 荣获浙江省绿色低碳工厂
 Awarded as a national level specialized, refined, and innovative "Little Giant" enterprise
 Awarded the title of "Specialized, Refined, and New" Small and Medium sized Enterprise in Zhejiang Province, awarded the title of "Green and Low Carbon Factory" in Zhejiang Province

2020年
 获评浙江省科学技术进步奖-二等奖
 荣获金华市商标品牌示范企业
 荣获东阳市市长质量奖
 Awarded the Second Prize of Zhejiang Provincial Science and Technology Progress Award
 Awarded as a trademark brand demonstration enterprise in Jinhua City
 Received the Quality Award from the Mayor of Dongyang City

2021年
 铁氧体磁瓦新线建成,产能突破万吨
 获评浙江省中科磁业磁性材料省级企业技术研究院
 获评浙江省企业技术中心
 认定为浙江省首台(套)产品-国内首批次新材料
 The construction of a new line of ferrite magnetic tiles, with a production capacity exceeding 10000 tons
 Awarded as a provincial-level enterprise technology research institute for magnetic materials by Zhejiang Zhongke Magnetic Industry
 Awarded as Zhejiang Provincial Enterprise Technology Center
 Recognized as the first product (set) in Zhejiang Province - the first batch of new materials in China

2022年7月
 创业板上市委审核通过
 Approved by the Municipal Party Committee on the Growth Enterprise Board

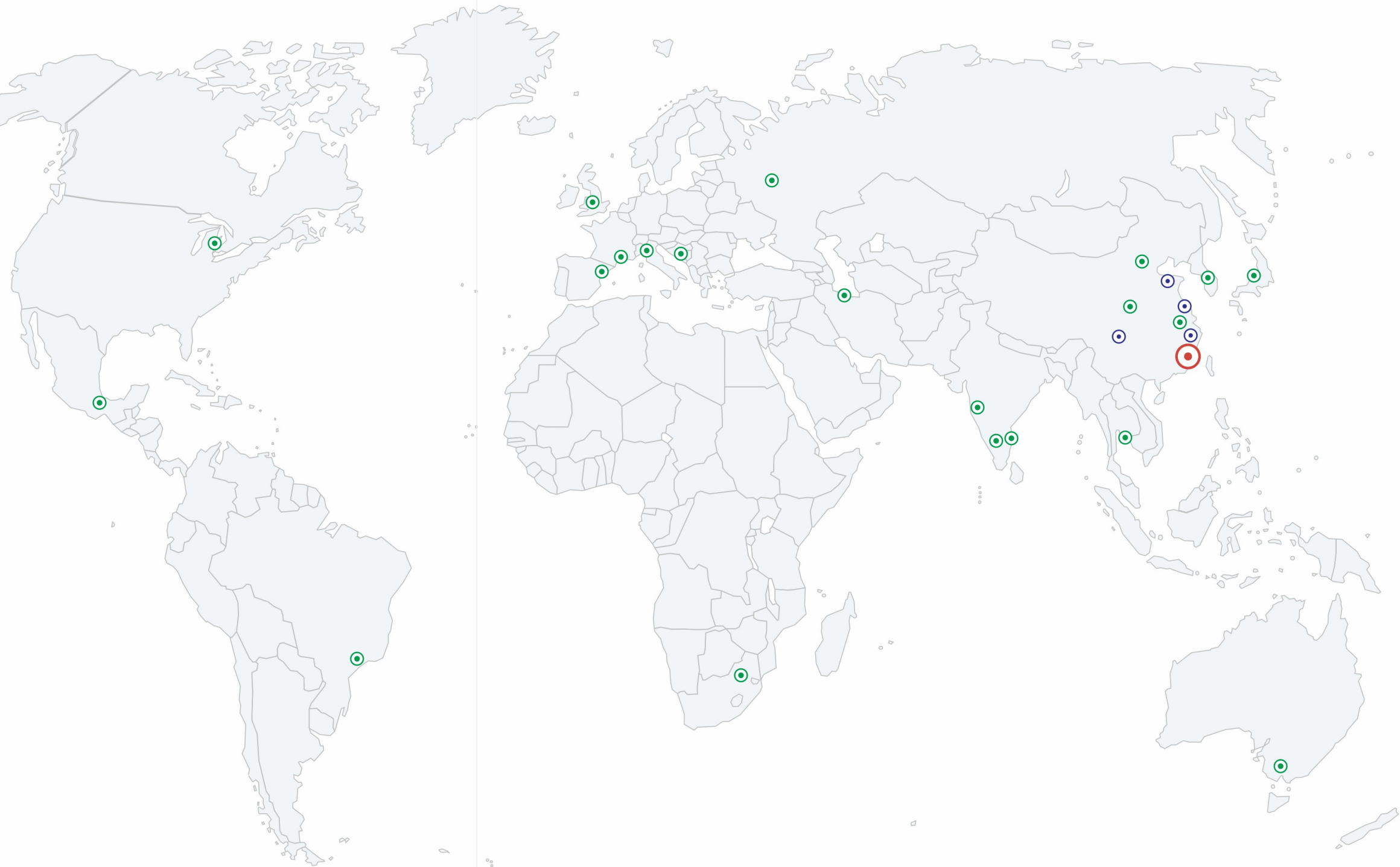
2023年4月
 在深交所成功上市
 现阶段,在烧结钕铁硼产品领域,公司全球中高端消费电子市场具备较强的竞争力;在永磁铁氧体产品领域,公司属于行业内第一梯队
 At present, in the field of sintered neodymium iron boron products, the company has strong competitiveness in the global high-end consumer electronics market; In the field of permanent magnet ferrite products, the company belongs to the first tier in the industry

2019年
 永磁铁氧体业务转型升级,全面推进磁瓦业务
 荣获浙江省规模以上工业企业“亩均效益”综合评价A类企业
 Transformation and upgrading of permanent magnet ferrite business, comprehensively promoting the magnetic tile business
 Awarded as a Class A enterprise in the comprehensive evaluation of "per mu benefit" for industrial enterprises above designated size in Zhejiang Province
 前身中科股份设立于2010年3月22日,设立时的名称为“浙江中科磁业股份有限公司”;2011年11月18日,中科股份召开股东大会并通过决议,同意将中科股份变更为中科有限,变更后的名称为“浙江中科磁业有限公司”;2018年11月28日,中科有限整体变更设立为股份有限公司,变更后的名称为“浙江中科磁业股份有限公司”。
 The predecessor, Zhongke Co., Ltd., was established on March 22, 2010 under the name of "Zhejiang Zhongke Magnetic Industry Co., Ltd."; On November 18, 2011, China Science and Technology Corporation held a shareholders' meeting and passed a resolution, agreeing to change China Science and Technology Corporation to China Science and Technology Co., Ltd., with the changed name being "Zhejiang China Science and Technology Magnetic Industry Co., Ltd."; On November 28, 2018, Zhongke Co., Ltd. was changed and established as a joint stock limited company, with the changed name being "Zhejiang Zhongke Magnetic Industry Co., Ltd."



未来几年，公司将充分利用国家对永磁材料行业的政策支持，依托现有的研发、客户、品牌、管理和市场等优势，紧紧围绕公司发展战略，继续做大做强，年产20000吨高性能电机磁瓦及年产6000吨高性能钕铁硼磁钢技改项目。同时，公司将不断加大技术研发投入，保持产品的市场优势地位，提高公司市场占有率。

In the coming years, the company will fully utilize the national policy support for the permanent magnet material industry, relying on existing advantages in research and development, customer, brand, management, and market, and closely focusing on the company's development strategy, continue to grow and strengthen, with an annual production of 20000 tons of high-performance motor magnetic tiles and 6000 tons of high-performance neodymium iron boron magnetic steel technology transformation projects. At the same time, the company will continue to increase investment in technological research and development, maintain the market advantage of its products, and increase its market share.



GLOBAL

全球战略

1 个中心 2 个基本 3 项战略 4 大能力

- 1、围绕“一个中心”，即以利润增长为中心，一方面加大规模化生产的力度，积极开拓市场，凭借产品质量和客户资源扩大营收以推动利润增长，另一方面坚持精细化经营理念，通过增强生产效率、有效降低成本、自动化生产等途径提升利润率，实现内涵式增长，使公司在市场竞争中保持长久的竞争优势。
- 2、坚守“两个基本”，即以技术创新和品质保证为基本，构建技术创新保证体系和品质一致保证体系，持续开展技术创新与品质改善活动，促进公司经营管理水平全面提升。
- 3、实施“三项战略”，即组合实施销售战略、人才战略和管理战略，构建较为完整的全员销售体系、人才培育体系和管理标准体系，提高公司整体核心竞争力。
- 4、提升“四大能力”，即提升持续发展的技术创新能力、规范化的企业管理能力、精细化的生产制造能力和国际化的市场开拓能力。

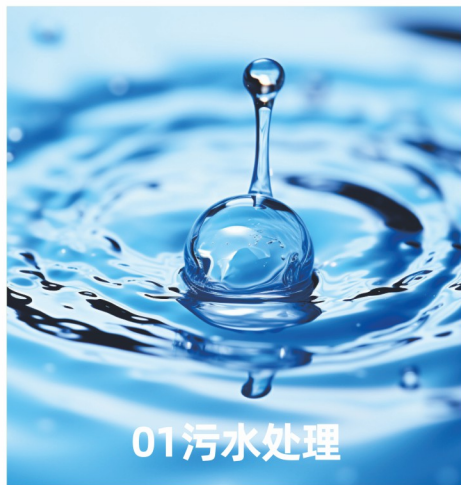
1. Focusing on "one center", which focuses on profit growth, on the one hand, we will increase the intensity of large-scale production, actively explore the market, expand revenue with product quality and customer resources to promote profit growth, and on the other hand, we will adhere to the concept of refined management, improve profit margins through enhancing production efficiency, effectively reducing costs, and automated production to achieve connotative growth, Enable the company to maintain a long-term competitive advantage in market competition.
2. Adhere to the "two basics", that is, based on technological innovation and quality assurance, build a technological innovation assurance system and a quality consistency assurance system, continue to carry out technological innovation and quality improvement activities, and promote the comprehensive improvement of the company's management level.
3. Implement the "Three Strategies", which combine sales strategy, talent strategy, and management strategy to build a relatively complete sales system, talent cultivation system, and management standard system for all employees, and improve the overall core competitiveness of the company.
4. Enhance the "four major capabilities", namely enhancing the sustainable development of technological innovation capabilities, standardized enterprise management capabilities, refined production and manufacturing capabilities, and international market development capabilities.

SOCIAL RESPONSIBILITY

社会责任

公司的生产经营严格遵守国家环境保护相关法律法规，对生产经营过程中产生的主要污染物均采取了合理有效的处理措施，其排放标准和排放量均符合国家相关法规的要求。公司生产经营中产生的环境污染物有废水、废气、固废以及噪声四类，主要处理设施及处理能力如下：

The production and operation of the company strictly comply with national environmental protection laws and regulations, and reasonable and effective treatment measures have been taken for the main pollutants generated during the production and operation process. The emission standards and amounts meet the requirements of relevant national regulations. The environmental pollutants generated in the company's production and operation include wastewater, exhaust gas, solid waste, and noise. The main treatment facilities and capacity are as follows:



01 污水处理

废水主要分为生产废水和生活污水。生产废水经沉淀处理后回用，不外排；生活污水经沉淀池预处理达标后纳入污水管网，送东阳市横店污水处理厂处理。

Wastewater is mainly divided into production wastewater and domestic wastewater. Production wastewater is reused after sedimentation treatment and not discharged; After being pre-treated by a sedimentation tank and meeting the standards, domestic sewage is included in the sewage pipeline network and sent to Hengdian Sewage Treatment Plant in Dongyang City for treatment.



02 废气处理

废气主要为生产加工过程中产生的油雾废气、粉尘、窑炉烟气。油雾废气经油雾净化装置处理后通过排气筒高空排放；粉尘经自带的布袋除尘器处理后通过排气筒排放；窑炉烟气系清洁能源天然气燃烧形成，其污染物量极少且各污染物排放浓度符合标准，通过排气筒排放。公司的废气排放均符合相关环保标准。

The exhaust gas mainly includes oil mist exhaust gas, dust, and kiln flue gas generated during the production and processing process. The oil mist exhaust gas is treated by the oil mist purification device and discharged at high altitude through the exhaust funnel; The dust is treated by the built-in bag filter and discharged through the exhaust funnel; Kiln flue gas is formed by the combustion of clean energy natural gas, and its pollutant amount is very small and the emission concentration of each pollutant meets the standards, which is discharged through the exhaust funnel. The company's exhaust emissions comply with relevant environmental standards.



03 固体废料

公司对危险固废、一般工业固废、生活垃圾实行分类收集、贮存并妥善处置。处置方式通常包括回用生产、外售综合利用、委托环卫部门统一清运、委托具有相应资质的企业进行妥善处置等。

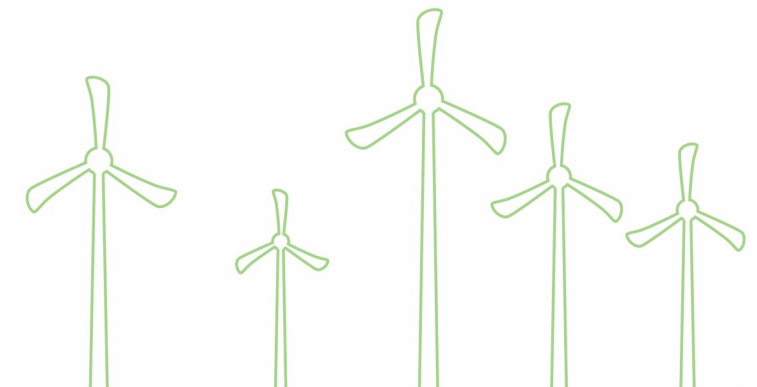
The company classifies, collects, stores, and properly disposes of hazardous solid waste, general industrial solid waste, and household waste. The disposal methods usually include recycling production, outsourcing for comprehensive utilization, entrusting the environmental sanitation department for unified cleaning and transportation, and entrusting qualified enterprises for proper disposal.



04 噪音处理

噪声主要来源于各类设备的运行。公司通过合理布局，选用低噪声、振动小的设备，安装隔音板、减振器，采用柔性橡胶接头连接，以降低噪声、减少振动。同时，公司加强了设备管理和维护，保持设备正常运行，减少设备因故障引起的高噪音。

The noise mainly comes from the operation of various equipment. The company adopts a reasonable layout, selects low noise and low vibration equipment, installs sound insulation panels and shock absorbers, and uses flexible rubber joints for connection to reduce noise and vibration. At the same time, the company has strengthened equipment management and maintenance to maintain normal operation and reduce high noise caused by equipment failures.





R&D TEAM

研发团队



开发部门 Development Department

我们的开发部门坚持以磁性材料的关键技术与工艺开发为核心。Our development department adheres to the core of developing key technologies and processes for magnetic materials.



检测中心 Testing Center

已具备稳定的全工序品质保障队伍，拥有完整的检测设备。We have a stable quality assurance team for the entire process and complete testing equipment.



技术部门 technical department

实行集成引进先进技术装备与自主研发特种专用实用装备。Implementing integrated introduction of advanced technological equipment and independent research and development of special proprietary practical equipment.



样品部门 Sample department

仓储面积超1000平，实行6S现场管理和ERP和OA系统管理，定期对产品进行盘查。The storage area exceeds 1000 square meters, and 6S on-site management and ERP and OA system management are implemented, with regular inventory of products.

中科注重研发体系建设和相关人才的储备与培养，研发投入逐年增加，目前已建立起了高效的研发体系和经验丰富的研发团队。截至2021年12月31日，公司研发人员超60人以上，研发团队中拥有多位永磁材料行业从业时间达二十多年的资深行业专家。

公司长期坚持以市场为导向，注重产品开发前的市场调研和客户需求分析，针对下游客户和市场需求开展研发与技术创新。销售部门负责根据产品销售情况或市场调研情况，及时向研发部门提供市场信息和产品动向，研发部门负责根据市场需求信息制定研发计划并组织各阶段的研究开发工作，以确保技术创新持续进行，并且能够满足客户和市场需求。

中科技术中心（研究院）实行总经理领导下的中心主任负责制，中心下设开发部、技术部、检测中心、质量部和样品车间。自企业技术中心（研究院）成立以来，技术创新活动进一步规范化和日常化，经过多年建设，逐步形成了一个以企业技术中心（研究院）为主体，公司总部与分厂、内部与外部共同联动的企业技术创新体系。

该体系的特征可以概括为“一个核心、三个结合；层次清晰、多点分布”。其中，“一个核心”是指在产业领域上，坚持以磁性材料的关键技术与工艺开发为核心。“三个结合”分别是指在创新内容上，实现产品创新与工艺创新相结合；在创新手段上，实行集成引进先进技术装备与自主研发特种专用实用装备相结合；在创新技术源头上，坚持独立开发与产学研合作相结合。“层次清晰”是指明确不同级别的研发机构承担不同层次的创新任务，公司总部层面的技术中心（研究院）主要进行行业前瞻性技术的储备与大型项目的合作研发，而分厂里的技术部门则主要负责工艺设备与流程的技术改造。“多点分布”是指公司在实现一定程度的战略扩张之后，在地域网络分布的各个点上同时开展有针对性（比如原材料利用率或为客户提供专属设计等）的创新活动，实现企业的全时空创新。

Zhongke attaches great importance to the construction of its R&D system and the reserve and cultivation of relevant talents. Its R&D investment has been increasing year by year, and an efficient R&D system and experienced R&D team have been established. As of December 31, 2021, the company has over 60 R&D personnel, and the R&D team includes multiple senior industry experts who have been in the permanent magnet material industry for over 20 years.

The company has long adhered to a market-oriented approach, focusing on market research and customer demand analysis before product development, and conducting research and technological innovation targeting downstream customers and market demands. The sales department is responsible for providing market information and product trends to the R&D department in a timely manner based on product sales or market research. The R&D department is responsible for formulating R&D plans based on market demand information and organizing and coordinating research and development work at each stage to ensure that technological innovation continues and can meet the needs of customers and the market.

The China Science and Technology Center (Research Institute) implements a director responsibility system under the leadership of the general manager, with development department, technology department, testing center, quality department, and sample workshop under the center. Since the establishment of the Enterprise Technology Center (Research Institute), technological innovation activities have been further standardized and normalized. After years of construction, a corporate technology innovation system has gradually formed, with the Enterprise Technology Center (Research Institute) as the main body and the company headquarters and branches, as well as internal and external linkage.

The characteristics of this system can be summarized as "one core, three combinations; clear hierarchy, multi-point distribution". Among them, "one core" refers to adhering to the development of key technologies and processes of magnetic materials as the core in the industrial field. The "three combinations" respectively refer to the combination of product innovation and process innovation in terms of innovative content; In terms of innovative means, we will integrate the introduction of cutting-edge technology and equipment with independent research and development of specialized practical equipment; In terms of innovative technology sources, we adhere to the combination of independent development and industry university research cooperation. Clear hierarchy "refers to the identification of R&D institutions at different levels to undertake innovative tasks at different levels. The technology center (research institute) at the headquarters level of the company is mainly responsible for industry forward-looking technology reserves and collaborative research and development of large-scale projects, while the technology department at the branch factory is mainly responsible for technological transformation of process equipment and processes. Multi point distribution "refers to a company that, after achieving a certain degree of strategic expansion, simultaneously carries out targeted innovation activities (such as raw material utilization rate or providing exclusive designs for customers) at various points in the regional network distribution, achieving full time and space innovation of the enterprise.

CATEGORY

产品分类

中科的主要产品为永磁材料，可分为烧结钕铁硼永磁材料和永磁铁氧体磁体两类。永磁材料又称硬磁材料，是一种磁化后去掉外磁场，能长期保留磁性，能经受一定强度的外加磁场干扰的重要基础功能材料，具有宽磁滞回线、高矫顽力和高剩磁的特点，能够实现电信号转换、能量传递等重要功能

The main products of Zhongke are permanent magnet materials, which can be divided into two categories: sintered neodymium iron boron permanent magnet materials and permanent ferrite magnets. Permanent magnet material, also known as hard magnetic material, is an important basic functional material that can remove the external magnetic field after magnetization, retain magnetism for a long time, and withstand interference from a certain strength of external magnetic field. It has the characteristics of wide hysteresis loop, high coercivity, and high remanence, and can achieve important functions such as electrical signal conversion and energy transfer

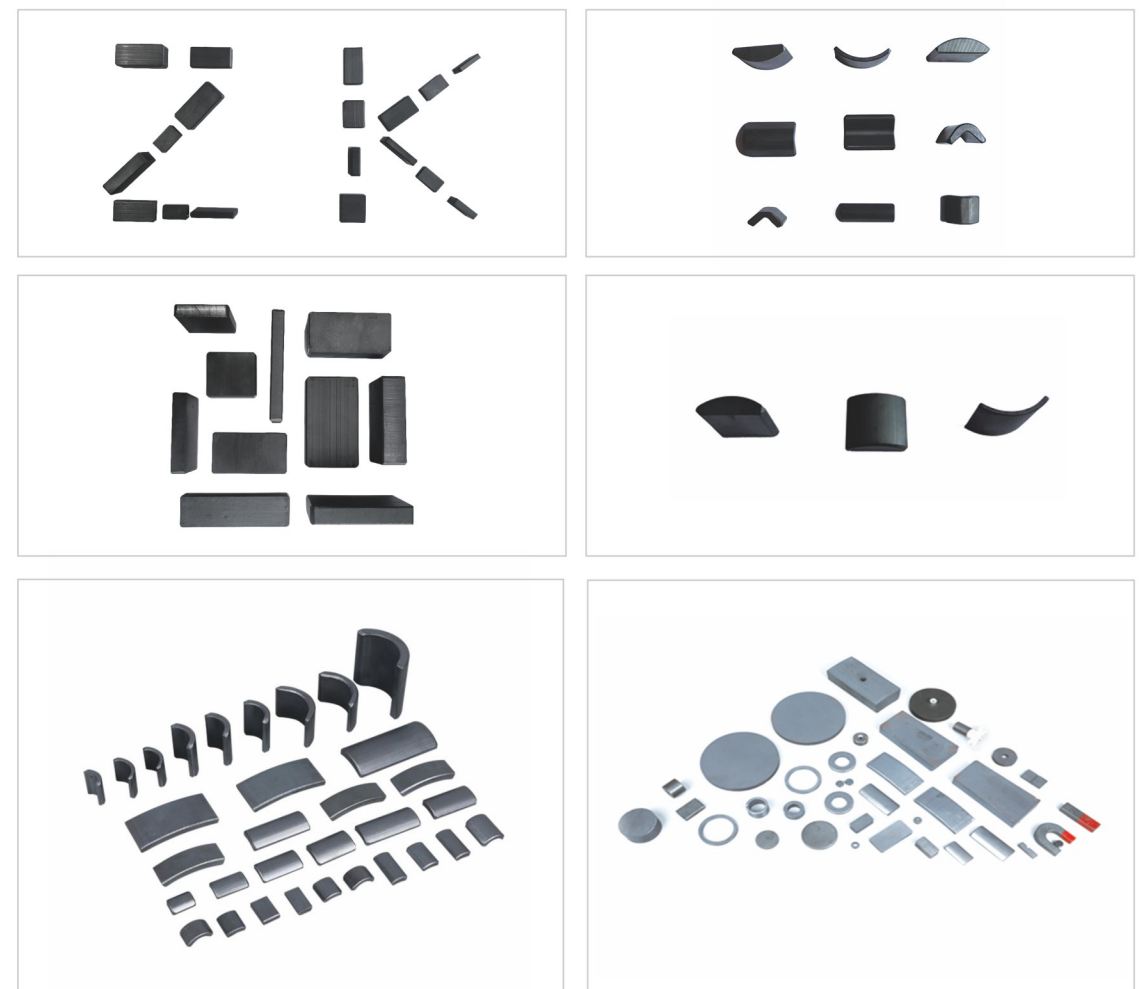
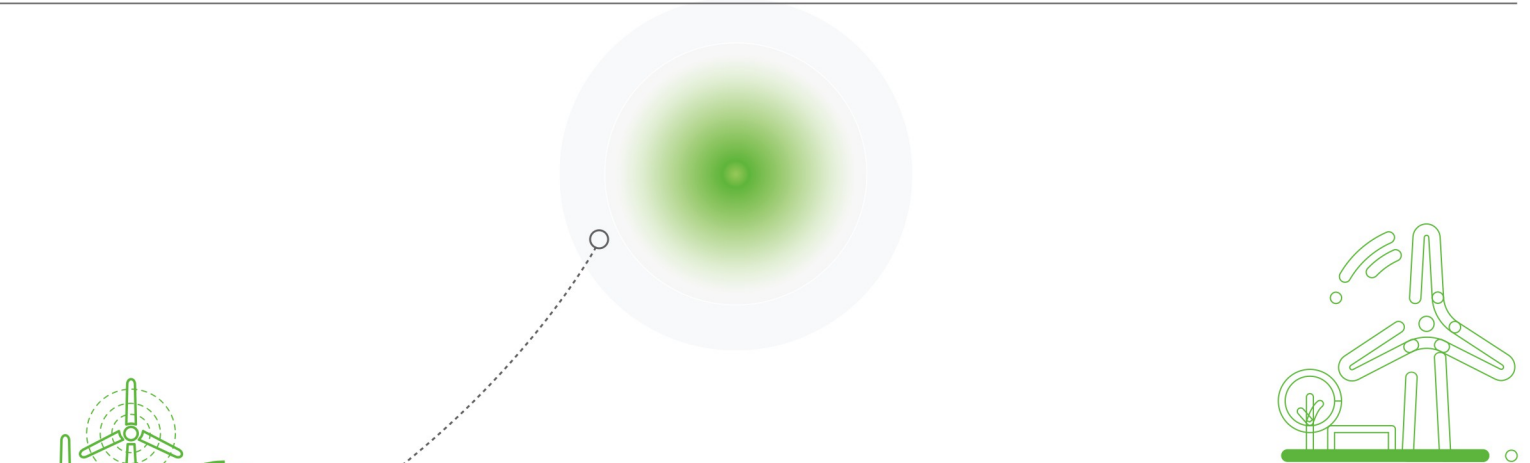
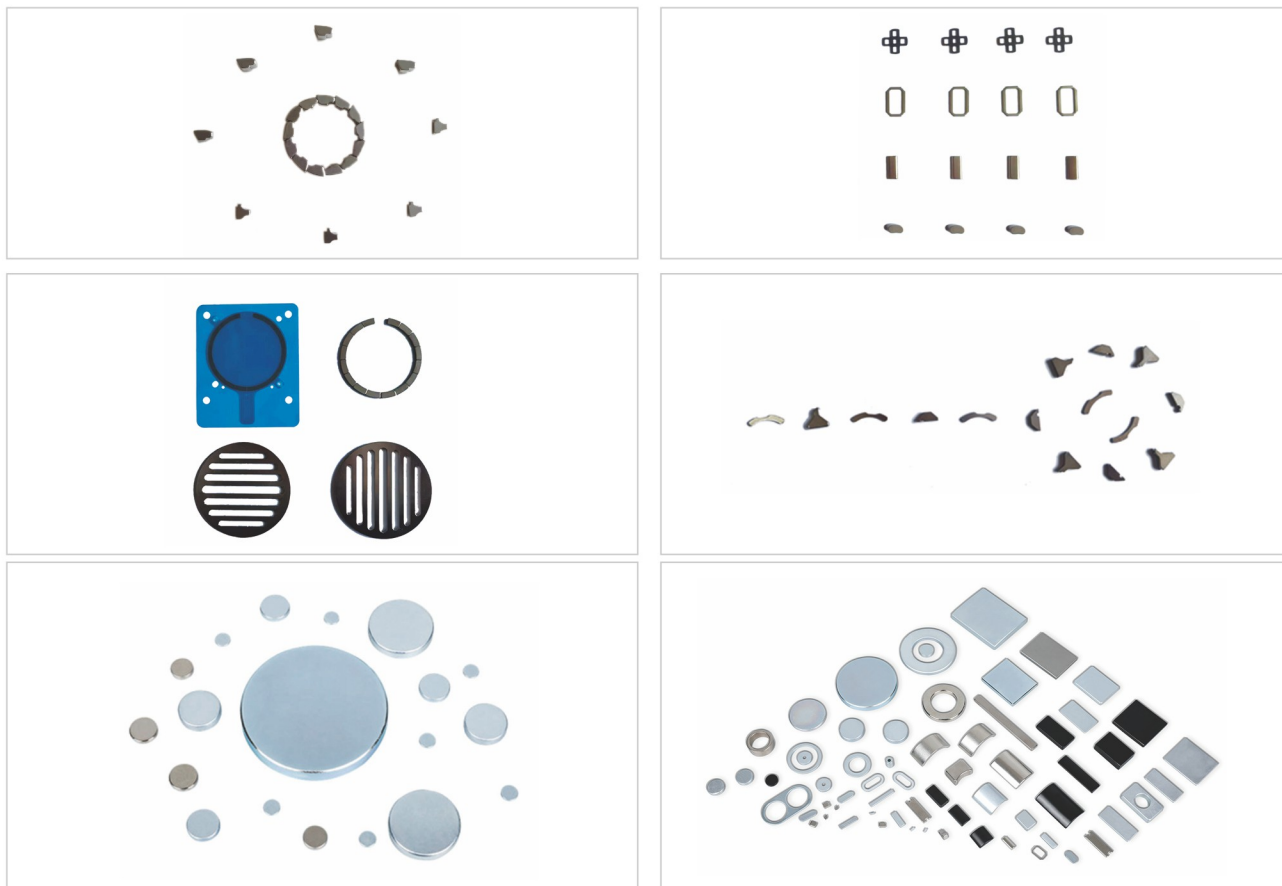
烧结钕铁硼永磁材料 Sintered neodymium iron boron permanent magnet material

烧结钕铁硼永磁材料属于第三代稀土永磁材料，具有磁性强、质量轻、体积小、能效高等特点，是目前工业化生产中综合性能较高的永磁材料，是精密电声器件、稀土永磁电机等当代制造业重要部件的关键电子材料，其普及应用符合我国的节能减排政策，对实现“碳达峰、碳中和”具有重要意义。

公司目前生产的烧结钕铁硼永磁材料的产品性能可以满足众多应用领域的中高端市场需求，按内禀矫顽力 HCJ 的不同可分为 N、M、H、SH、UH、EH、TH 七个系列，形成了 70 多个牌号的系列产品。

Sintered neodymium iron boron permanent magnet material belongs to the third generation of rare earth permanent magnet materials, which have the characteristics of strong magnetism, light weight, small volume, and high energy efficiency. It is currently a permanent magnet material with high comprehensive performance in industrial production, and is a key electronic material for important components in contemporary manufacturing industries such as precision electro-acoustic devices and rare earth permanent magnet motors. Its widespread application is in line with China's energy-saving and emission reduction policies, and is of great significance for achieving "carbon peaking and carbon neutrality".

The performance of the sintered neodymium iron boron permanent magnet materials currently produced by the company can meet the mid to high end market demand in many application fields. According to the different intrinsic coercivity HCJ, they can be divided into seven series: N, M, H, SH, UH, EH, TH, forming a series of over 70 brands of products.



永磁铁氧体磁体 Permanent ferrite magnet

永磁铁氧体磁体通常指烧结永磁铁氧体磁体，属于第二代永磁材料，具有电阻率高、稳定性好、耐环境变化力强的特点，原料来源丰富且成本较低，适宜大批量生产，是电声器件、永磁电机等组件的关键电子材料。公司目前生产的永磁铁氧体磁体共有 20 种牌号，规格齐全，形成了较为完整的产品集群，可以满足众多应用领域的多元化市场需求。

Permanent magnet ferrite magnets usually refer to sintered permanent magnet ferrite magnets, which belong to the second generation of permanent magnet materials. They have the characteristics of high resistivity, good stability, strong resistance to environmental changes, rich raw material sources, low cost, and are suitable for mass production. They are key electronic materials for components such as electroacoustic devices and permanent magnet motors. The company currently produces a total of 20 brands of permanent magnet ferrite magnets with complete specifications, forming a relatively complete product cluster that can meet the diversified market demands of many application fields.

TECHNOLOGICAL PROCESS

工艺流程



烧结钕铁硼工艺流程 Process flow of sintered neodymium iron boron

公司目前生产烧结钕铁硼永磁材料的流程可分为坯料工序（行业内亦称“前道工序”）和成品工序（行业内亦称“后道工序”）两部分：坯料工序是将镨钕金属、纯铁、硼铁等原料制成钕铁硼毛坯；成品工序是通过机械加工、表面处理等方式对钕铁硼毛坯进行加工从而获得钕铁硼磁钢。具体的生产工艺流程图如下：

The current production process of sintered neodymium iron boron permanent magnet materials by the company can be divided into two parts: the blank process (also known as the "pre process" in the industry) and the finished product process (also known as the "post process" in the industry): the blank process is the production of neodymium iron boron billets from raw materials such as praseodymium neodymium metal, pure iron, and ferroboron; The finished product process involves processing neodymium iron boron billets through mechanical processing, surface treatment, and other methods to obtain neodymium iron boron magnetic steel. The specific production process flowchart is as follows:



原料配比

将镨钕金属、纯铁、硼铁等固体原料按比例进行混合。
Mix solid raw materials such as CuoQin metal, pure iron, and boron iron in proportion.



熔炼

通过熔炼炉将混合好的原料进行熔炼，再通过甩带形成速凝薄带合金片。
The mixed raw materials are melted in a melting furnace, and then rapidly solidified thin strip alloy sheets are formed through strip casting.



破碎制粉

通过中碎炉将速凝薄带合金片破碎制成合金粗粉，再通过气流磨制成合金细粉。
Crush the rapidly solidified thin strip alloy sheet into coarse alloy powder through a medium crushing furnace, and then grind it into fine alloy powder through airflow.



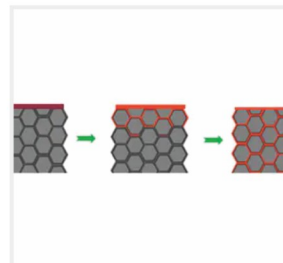
压制成型

在氮气保护下将粉末通过压机制成压坯。
Under nitrogen protection, the powder is pressed into a compact using a press.



表面处理

为满足耐磨性、耐腐蚀性等性能的要求，对磁体表面进行机械打磨、电化学处理等。
To meet the requirements of wear resistance, corrosion resistance, and other performance requirements, the surface of the magnet is subjected to mechanical polishing, electrochemical treatment, etc.



晶界扩散

将重稀土金属或化合物覆盖到磁体表面，通过加热方法使重稀土元素扩散到烧结钕铁硼磁体内部。
Cover the surface of the magnet with heavy rare earth metals or compounds, and use heating methods to diffuse the heavy rare earth elements into the interior of the sintered iron boron magnet.



机械加工

根据订单对形状及尺寸的具体要求使用专业设备对毛坯进行加工，包括磨加工、线切割、切片、打孔等。
According to the specific requirements of the order for shape and size, use professional equipment to process the blank, including grinding, wire cutting, slicing, punching, etc.



真空烧结

通过烧结炉在真空环境下将压坯加热至高温后进行时效热处理形成软铁硼毛坯。
By heating the compact to high temperature in a vacuum environment through a sintering furnace, it undergoes aging heat treatment to form Qinironboron blank.



充磁

根据订单的需求，使用充磁机将磁体在磁场中磁化。
According to the requirements of the order, use a magnetizer to magnetize the magnet in a magnetic field.



检验、包装

根据订单要求对磁体的磁性能、外观、尺寸、耐腐蚀性等各项性能进行检验，检验合格后方可进行包装入库。
According to the order requirements, inspect the magnetic properties, appearance, size, corrosion resistance, and other properties of the magnet. Only after passing the inspection can it be packaged and stored.

■ 制粉工艺方面，公司应用铸片柱状晶生长调控技术、晶粒细化微观优化技术等，致力于改善粉料一致性及发挥稀土性能潜力，通过改良熔炼微观结构，应用细晶技术，优化混料工艺方式等，显著提升了钕铁硼磁钢的性能。

■ 成型与烧结工艺方面，公司应用并改良了低氧磁体制备技术、冷等静压技术，使钕铁硼磁钢在压制过程中处于低氧状态，成型坯料制备不断优化，有效地降低了稀土损耗；低温烧结热处理技术的应用使得烧结工艺进一步得到提升，将温度调整为适宜的状态，可以充分发挥配方性能，代表产品为低氧工艺制备的高性能N55磁钢、采用近终成型技术生产的N38UH磁钢。

■ 加工工艺方面，为追求客户定制化的准确精度，公司应用高性能超薄小异形永磁制备技术，对钕铁硼毛坯进行高效率、低损耗精密加工，突破了高性能薄小磁体加工难度大的技术瓶颈，并通过智能影像外观自动化检测技术对产品外观缺陷进行严格把控，提升检测效率和准确性。

■ In terms of powder production process, the company applies technologies such as casting columnar crystal growth control technology and grain refinement micro optimization technology to improve the consistency of powder and unleash the potential of rare earth properties. By improving the microstructure of melting, applying fine crystal technology, and optimizing the mixing process, the performance of neodymium iron boron magnetic steel has been significantly improved.

■ In terms of forming and sintering processes, the company has applied and improved low oxygen magnet preparation technology and cold isostatic pressing technology to keep neodymium iron boron magnetic steel in a low oxygen state during the pressing process. The preparation of formed billets is continuously optimized, effectively reducing rare earth loss; The application of low-temperature sintering heat treatment technology has further improved the sintering process. Adjusting the temperature to a suitable state can fully utilize the formula performance, represented by high-performance N55 magnetic steel prepared by low oxygen process and N38UH magnetic steel produced by near final forming technology.

■ In terms of processing technology, in order to pursue customer customized accuracy, the company applies high-performance ultra-thin small irregular permanent magnet preparation technology to efficiently and low-loss precision machining of neodymium iron boron billets, breaking through the technical bottleneck of high difficulty in processing high-performance thin small magnets. Through intelligent image appearance automation detection technology, the company strictly controls product appearance defects, improving detection efficiency and accuracy.

TECHNOLOGICAL PROCESS

工艺流程

永磁铁氧体磁体的工艺流程 Process flow of permanent ferrite magnets

公司目前生产永磁铁氧体磁体的流程为：将外购的预烧料按自有配方与配料进行混合，经球磨机球磨后，通过沉淀、湿压成型、烧结、磨加工等步骤制成铁氧体磁瓦、铁氧体磁钢等成品。具体的生产工艺流程图如下：

The current process of producing permanent magnet ferrite magnets by the company is to mix the purchased pre fired materials with their own formula and ingredients, and after ball milling by a ball mill, produce ferrite magnetic tiles, ferrite magnetic steel, and other finished products through precipitation, wet pressing, sintering, grinding and other steps. The specific production process flowchart is as follows:

<p>① 原料配比 Raw material ratio</p> <p>将锶铁氧体预烧料（主要成分为SrFe12O19）与碳酸钙、二氧化硅、碳酸锶、氧化、氧化钴等配料按配方比例进行混合。 Mix the pre fired strontium ferrite material (mainly composed of SrFe12O19) with ingredients such as calcium carbonate, silicon dioxide, strontium carbonate, oxidation, cobalt oxide, etc. according to the formula ratio.</p>	<p>② 球磨/沉淀 Ball milling/sedimentation</p> <p>原料加水经球磨机粉碎后形成料浆,料浆置入沉淀塔进行沉淀。 The raw materials are crushed with water through a ball mill to form a slurry, which is placed in a sedimentation tower for sedimentation.</p>	<p>③ 湿压成型 Wet compression molding</p> <p>将经沉淀形成的脱水料在正常空气环境下通过自动化压机制成生坯。 The dehydrated material formed by precipitation is processed into green billets through an automated press under normal air conditions.</p>	<p>④ 烧结 sinter</p> <p>通过湿压磁瓦电烧窑或湿压磁钢气烧窑将生坯高温烧结成熟坯。 By using wet pressed magnetic tile electric sintering kiln or wet pressed magnetic steel gas sintering wheel kiln, the green billets are sintered into mature billets at high temperature.</p>	<p>⑤ 磨加工 grinding</p> <p>熟坯经全自动磨床加工线加工后形成成品。 The cooked billet is processed by a fully automatic grinding machine processing line to form a finished product.</p>	<p>⑥ 检验、包装 Inspection and packaging</p> <p>对磁体的磁性能、外观、尺寸等各项指标进行检验、包装入库。 Inspect, package, and store the magnetic properties, appearance, dimensions, and other indicators of the magnet.</p>



在球磨工艺方面，公司应用并改良了高性能铁氧体料浆稳定技术、二次球磨配料工艺技术等多项业内先进技术，解决了制备过程中材料添加的定量问题，并分别采用双偶合分散、分细磨攻克了料浆团聚和粒径分布一致性的难题。球磨环节获取的料浆性能更为稳定，减少了球磨设备单位作业时间，提高了产品质量，降低了生产成本。

在成型工艺方面，公司采用自主研发独特的新型绿色环保脱模剂制备磁瓦，新型绿色环保脱模剂是微生物技术与表面脱模处理技术的有机结合，可降解油污分子、减少脱模剂的含油量、还原表面活性亲油因子。产品结合表面脱模工艺，通过新型脱模剂，改善了磁瓦的脱模效果，提高了坯料的表面光洁度。该脱模技术具有制备方法简单、应用便捷的特点，提高了生产效率。

In terms of ball milling technology, the company has applied and improved multiple advanced technologies in the industry, such as high-performance ferrite slurry stabilization technology and secondary ball milling batching technology, to solve the quantitative problem of material addition during the preparation process. It has also solved the problems of slurry agglomeration and particle size distribution consistency through dual coupling dispersion and fine grinding. The slurry performance obtained in the ball milling process is more stable, reducing the unit operation time of the ball milling equipment, improving product quality, and reducing production costs.

In terms of molding process, the company adopts a unique new type of independently developed green and environmentally friendly release agent to prepare magnetic tiles. The new green and environmentally friendly release agent is an organic combination of microbial technology and surface release treatment technology, which can degrade oil molecules, reduce the oil content of the release agent, and reduce the surface active lipophilic factor. The product combines surface demolding technology and improves the demolding effect of the magnetic tile through a new demolding agent, thereby improving the surface smoothness of the billet. This demolding technology has the characteristics of simple preparation method and convenient application, which improves production efficiency.

In terms of sintering process, the company has improved the sintering preheating system equipment to reduce the water content of sintered green billets entering the kiln, significantly reducing the waste rate caused by factors such as cracking and oxygen deficiency during sintering, improving the sintering density and mechanical strength of the products, and obtaining good microstructure and magnet performance. The company has also adjusted the formula to achieve the sintering base temperature that different performance products can adapt to. Products with different specifications, sizes, and performance can be co fired at the same temperature, significantly improving the production efficiency of the sintering process. In addition, in terms of veneer loading capacity and billet loading method, the company has adopted a bulk stacking method that conforms to the small shape and light weight characteristics of the company's products through multiple experiments, achieving good results such as heavy veneer loading, good sintering atmosphere, and high sintering yield.

In terms of grinding process, the company has improved the consistency of product thickness to $\leq 0.02\text{MM}$ within L30MM and $\leq 0.04\text{MM}$ within L50MM by optimizing the parameters of grinding equipment and improving process technology. It has mastered the technology of producing three-phase motor magnets through grinding tooling, and has made breakthroughs in industry technical difficulties such as product thickness, product accuracy, and stable equipment performance. It has achieved certain innovation in technology and equipment.

In terms of secondary development, the company's magnetic tile products are developing towards high efficiency, low consumables, and low energy consumption. For example, the company has independently developed high-performance motor magnetic tiles that do not contain rare earth elements, such as ZK-5B. Through atomic substitution and composite doping, and the use of strong magnetic field compression and the addition of double dispersants, the magnetic particle agglomeration is reduced, the orientation effect is improved, the material performance is improved, and production costs are reduced.

在烧结工艺方面，公司通过改造烧结预热系统设备，减少入窑内烧结生坯的含水量，大幅降低了坯件在烧结时开裂、缺氧等因素导致的废品率，提高了产品的烧结密度和机械强度，并获得良好的微观结构及磁体性能。公司也通过配方调整实现了不同性能产品能适应的烧结基础温度，不同规格尺寸、不同性能的产品可以进行同温共烧，显著提高了烧结工序的生产效率。另外，在单板装量和装坯方式上，公司经过多次试验采用了符合公司产品形状小及重量轻特点的散装码放方式，实现了单板装量重、烧结气氛好、烧结成品率高的良好效果。

在磨加工工艺方面，公司通过优化磨床等加工设备参数和改进工艺技术，使得产品厚度一致性提高到L30MM内 $\leq 0.02\text{MM}$ ，L50MM内 $\leq 0.04\text{MM}$ ，掌握了通过磨加工工装生产的三相电机磁体的技术，在产品厚度、产品精度、设备性能稳定等行业技术难点方面取得了突破，在工艺和装备上实现了一定创新。

在二次开发方面，公司磁瓦产品正朝着高效率、低耗材、低能耗的方向发展，如公司自主研发出不含稀土ZK-5B高性能电机磁瓦，通过原子替代和复合掺杂，并利用强磁场压制和添加双分散剂，减少了磁粉凝聚，提高了取向效果，改善了材料性能，降低了生产成本。

TEST EQUIPMENT

检测设备

- ① 影像仪 imager
- ② 通风柜 FUME HOOD
- ③ 智能磁通计 Intelligent magnetic flux meter
- ④ 永磁特性自动测量仪 Automatic measuring instrument for permanent magnet characteristics
- ⑤ 硬度计和能量色散X荧光光谱仪 Hardness tester and energy dispersive X-ray fluorescence spectrometer
- ⑥ 盐雾试验机 Salt spray testing machine
- ⑦ 推拉力计 Push-pull force gauge
- ⑧ 碳硫分析仪 Carbon and sulfur analyzer
- ⑨ 数字磁通计 Digital Flux Meter
- ⑩ 氢氧分析仪 Hydrogen and oxygen analyzer
- ⑪ 铅笔硬度机(测镀层) Pencil hardness machine (measuring coating)
- ⑫ 两箱冷热冲击试验箱 Two cold and hot impact test chambers
- ⑬ 可编程恒温恒湿仪 Programmable constant temperature and humidity meter
- ⑭ 激光粒度分析仪 Laser Particle Size Analyzer
- ⑮ 鼓风干燥箱 Drying box
- ⑯ 高温试验箱 high temperature test chamber
- ⑰ 磁性能特性测量仪 Magnetic property measurement instrument
- ⑱ X-strata镀层及厚度测试仪 X-strata coating and thickness tester
- ⑲ RCA织带耐磨试验机 RCA webbing wear resistance testing machine
- ⑳ ICP分析仪 ICP analyzer

钕铁硼检测设备



- ① 行星球磨机 Planetary ball mill
- ② 水份测试仪 Moisture tester
- ③ 马弗炉 muffle furnace
- ④ 密度测试仪 Density tester
- ⑤ 抗压测试机 Compression testing machine
- ⑥ 三坐标测量仪 Coordinate Measuring Machine
- ⑦ 三维波形测试仪 3D waveform tester
- ⑧ 电热恒温箱 electrothermostat
- ⑨ 充磁机 magnetizer
- ⑩ 磁性能测量仪和恒温箱以及温湿度计 Magnetic property measuring instrument, constant temperature box, and temperature and humidity meter
- ⑪ 平均粒度测量仪和密度计 Average particle size measuring instrument and density meter
- ⑫ 反电动势测量仪 Back electromotive force measuring instrument
- ⑬ 高斯计和磁通计以及耐压仪 Gauss meter, magnetic flux meter, and voltage tester
- ⑭ 影像测量仪 Image measuring instrument

铁氧体检测设备 Ferrite testing equipment



APPLICATION

行业应用

01.消费电子领域 Consumer Electronics

消费电子产品是指供消费者日常生活使用的智能电子硬件产品。

Consumer electronics products refer to intelligent electronic hardware products used by consumers in their daily lives.



新能源汽车

空调电机

02.节能家电领域 Energy saving household appliances field

家用电器是指帮助或替代人们进行家务劳动或者改善生活环境的各类电器产品。 Household appliances refer to various electrical products that help or replace people with household chores or improve their living environment.



直流电机

压缩机

06.智能制造领域 Intelligent manufacturing field

永磁材料是制造工业机器人的驱动电机以及永磁传感器、永磁锁紧阀等其他核心部件的关键材料。

Permanent magnet materials are key materials for manufacturing the drive motors of industrial robots, as well as other core components such as permanent magnet sensors and permanent magnet locking valves.



智能音响

电梯电机

03.工业设备领域 Industrial equipment field

工业电机是指工业领域广泛应用的风机、水泵、压缩机、机床等通用设备电机。

Industrial motors refer to general equipment motors widely used in the industrial field, such as fans, water pumps, compressors, and machine tools.



中科磁业
ZHONGKEMAGNET

05.风力发电领域 Wind power generation field

目前风电机组主要有双馈式和直驱永磁式两种。

At present, there are two main types of wind turbines: doubly fed and direct drive permanent magnet.



5G通讯

继电器

04.汽车工业领域 The automotive industry sector

根据安泰科数据，2018年全球高性能钕铁硼需求主要集中在汽车制造领域。

According to Antaiko data, the global demand for high-performance neodymium iron boron in 2018 was mainly concentrated in the automotive manufacturing sector.



PARTNERS

合作伙伴

主要客户为业内知名的电声器件制造商及永磁电机生产企业，
The main customers are well-known manufacturers of electroacoustic devices and permanent magnet motor manufacturers in the industry,

如歌尔股份, 国光电器, 通力科技, 韩国星主, EM-TECH, 威灵电机, 卧龙电驱, 友贸电机等等, 相关客户的产品主要应用于三星、哈曼、索尼、华为、小米、亚马逊、美的、格力、大金等全球知名消费电子、节能家电品牌

Our products are mainly used by globally renowned consumer electronics and energy-efficient home appliance brands such as Samsung, Harman, Sony, Huawei, Xiaomi, Amazon, Midea, Gree, Daikin, and others, such as Geely Electric, Korean Star Master, EM-TECH, Weiling Electric, Wolong Electric Drive, Youmao Electric, etc



永磁铁氧体磁性能检验标准 Sintered Ferrite Magnet Inspection Standards

性能牌号 Performance grade	剩磁感应强度 Br Residual magnetic induction intensity	磁感矫顽力 Hcb Magnetic coercivity	内禀矫顽力 Hcj Intrinsic coercivity	最大磁能积 (BH) max maximum magnetic energy product	密度 Density
	最小值 minimum value	最小值 minimum value	最小值 minimum value	范围 range	
ZK-4B	4000±100(Gs)	3250±150 (Oe)	3350±150 (Oe)	3.7±0.2 (MGOe)	4.8-5.0 (g/cm ³)
	400±10(mT)	259±12 (KA/m)	267±12 (KA/m)	29.6±1.6 (KJ/cm ³)	
ZK-4H	3800±100(Gs)	3550±150 (Oe)	4000±150 (Oe)	3.7±0.2 (MGOe)	4.8-5.0 (g/cm ³)
	380±10(mT)	283±12 (KA/m)	319±12 (KA/m)	29.6±1.6 (KJ/cm ³)	
ZK-5N	4050±100(Gs)	3250±150 (Oe)	3350±150 (Oe)	3.8±0.2 (MGOe)	4.8-5.0 (g/cm ³)
	405±10(mT)	259±12 (KA/m)	267±12 (KA/m)	30.4±1.6 (KJ/cm ³)	
ZK-5B	4150±100(Gs)	3250±150 (Oe)	3350±150 (Oe)	4.0±0.2 (MGOe)	4.8-5.0 (g/cm ³)
	415±10(mT)	259±12 (KA/m)	267±12 (KA/m)	32.0±1.6 (KJ/m ³)	
ZK-5H	3800±100(Gs)	3450±150 (Oe)	4500±150 (Oe)	3.8±0.2 (MGOe)	4.8-5.0 (g/cm ³)
	380±10(mT)	275±12 (KA/m)	358±12 (KA/m)	30.4±1.6 (KJ/m ³)	
ZK-5G	4000±100(Gs)	3500±150 (Oe)	4000±150 (Oe)	3.78±0.2 (MGOe)	4.8-5.0 (g/cm ³)
	400±10(mT)	278±12 (KA/m)	318±12 (KA/m)	30.3±1.6 (KJ/m ³)	
ZK-6A■	4300±100(Gs)	3400±150 (Oe)	3500±150 (Oe)	4.4±0.2 (MGOe)	4.9-5.1 (g/cm ³)
	430±10(mT)	271±12 (KA/m)	278.6±12 (KA/m)	35.2±1.6 (KJ/m ³)	
ZK-6B	4200±100(Gs)	3800±150 (Oe)	4150±150 (Oe)	4.18±0.2 (MGOe)	4.9-5.1 (g/cm ³)
	420±10(mT)	303±12 (KA/m)	330±12 (KA/m)	33.4±1.6 (KJ/m ³)	
ZK-6H	4000±100(Gs)	3700±150 (Oe)	4500±150 (Oe)	3.7±0.2 (MGOe)	4.9-5.1 (g/cm ³)
	400±10(mT)	294.6±12 (KA/m)	358.3±12 (KA/m)	29.6±1.6 (KJ/m ³)	
ZK-6N★	4400±100(Gs)	3300±150 (Oe)	3400±150 (Oe)	4.59±0.2 (MGOe)	4.9-5.1 (g/cm ³)
	440±10(mT)	262.7±12 (KA/m)	270.7±12 (KA/m)	36.72±1.6 (KJ/m ³)	
ZK-7B	4300±100(Gs)	3650±150 (Oe)	3850±150 (Oe)	4.2±0.3 (MGOe)	4.9-5.1 (g/cm ³)
	430±10(mT)	291±12 (KA/m)	307±12 (KA/m)	33.6±2.4 (KJ/m ³)	
ZK-7H	4200±100(Gs)	3800±150 (Oe)	4400±150 (Oe)	4.2±0.3 (MGOe)	4.9-5.1 (g/cm ³)
	420±10(mT)	303±12 (KA/m)	350±12 (KA/m)	33.6±2.4 (KJ/m ³)	
ZK-9B	4300±100(Gs)	3900±150 (Oe)	4300±150 (Oe)	4.4±0.2 (MGOe)	4.9-5.1 (g/cm ³)
	430±10(mT)	311±12 (KA/m)	342±12 (KA/m)	35.2±1.6 (KJ/m ³)	
ZK-9H	4250±100(Gs)	3750±150 (Oe)	4650±150 (Oe)	4.1±0.2 (MGOe)	4.9-5.1 (g/cm ³)
	425±10(mT)	298±12 (KA/m)	370±12 (KA/m)	33±1.6 (KJ/m ³)	
ZK-12B	4550±150(Gs)	4050±150 (Oe)	4550±150 (Oe)	4.7±0.2 (MGOe)	4.9-5.1 (g/cm ³)
	455±15(mT)	323±12 (KA/m)	362±12 (KA/m)	37.6±1.6 (KJ/m ³)	
ZK-12H	4300±150(Gs)	4000±150 (Oe)	5200±150 (Oe)	4.6±0.2 (MGOe)	4.9-5.1 (g/cm ³)
	430±15(mT)	319±12 (KA/m)	414±12 (KA/m)	36.8±1.6 (KJ/m ³)	

烧结钕铁硼磁性能检验标准 Sintered NdFeB Magnet Inspection Standards

性能牌号 Performance grade	剩磁感应强度 Br Residual magnetic induction intensity		磁感矫顽力 Hcb Magnetic coercivity		内禀矫顽力 Hcj Intrinsic coercivity		最大磁能积 (BH) max maximum magnetic energy product		方形度 Hk/Hcj squareness	最高工作温度 T w L/D = 0.7 Maximum operating temperature
	最小值 minimum value		最小值 minimum value		最小值 minimum value		范围 range			
	T	kGs	kA/m	kOe	kA/m	kOe	kA/m ³	MGOe	%	°C
N28ZH	1.04	10.4	kA/m	9.7	3184	40	207~239	26~30	/	250
N44TH	1.30	13.0	772	12.2	2786	35	326~358	41~45	/	230
N42TH	1.29	12.9	971	12.1	2786	35	318~350	40~44	/	230
N40TH	1.26	12.6	963	11.8	2786	35	302~334	38~42	/	230
N35TH	1.17	11.7	939	10.9	2786	35	263~295	33~37	/	230
N30TH	1.08	10.8	868	10.1	2786	35	223~255	28~32	/	230
N42TH	1.29	12.9	804	11.8	2627	33	318~342	43~46	/	220
N40TH	1.26	12.6	957	11.5	2627	33	302~326	40~43	/	220
N38TH	1.23	12.3	930	11.1	2627	33	287~310	38~41	/	220
N35TH	1.18	11.8	910	11.0	2786	35	263~287	36~39	/	220
N33TH	1.13	11.3	876	10.6	2786	35	247~270	33~36	/	220
N30TH	1.10	11.0	844	10.0	2786	35	223~247	31~33	/	220
N28TH	1.05	10.5	796	9.5	2786	35	207~230	25~29	/	220
N45EH	1.33	13.3	756	12.5	2308	29	342~366	45~49	90	200
N42EH	1.29	12.9	995	11.8	2308	29	318~342	43~46	90	200
N40EH	1.26	12.6	957	11.5	2388	30	302~326	40~43	90	200
N38EH	1.23	12.3	930	11.1	2388	30	287~310	38~41	90	200
N35EH	1.18	11.8	910	11.0	2388	30	263~287	36~39	90	200
N33EH	1.13	11.3	876	10.6	2388	30	247~270	33~36	90	200
N30EH	1.10	11.0	844	10.0	2388	30	223~247	31~33	90	200
N28EH	1.05	10.5	796	9.5	2388	30	207~230	25~29	90	200
N52UH	1.42	14.2	756	12.8	1911	24	390~422	49~53	90	180
N50UH	1.39	13.9	1018	12.8	1911	24	374~406	47~51	90	180
N48UH	1.37	13.7	1018	12.8	1911	24	358~390	45~49	90	180
N45UH	1.33	13.3	1018	12.5	1911	24	342~366	45~49	90	180
N42UH	1.29	12.9	995	11.8	1990	25	318~342	43~46	90	180
N40UH	1.26	12.6	957	11.5	1990	25	302~326	40~43	90	180
N38UH	1.23	12.3	930	11.1	1990	25	287~310	38~41	90	180
N35UH	1.18	11.8	910	11.0	1990	25	263~287	36~39	90	180
N33UH	1.13	11.3	876	10.6	1990	25	247~270	33~36	90	180
N30UH	1.10	11.0	844	10.0	1990	25	223~247	31~33	90	180
N28UH	1.05	10.5	796	9.5	1990	25	207~230	28~31	90	180
N52SH	1.42	14.2	756	12.8	1512	19	390~422	49~53	90	150
N50SH	1.39	13.9	1018	12.8	1512	19	374~406	47~51	90	150
N48SH	1.37	13.7	1018	12.8	1512	19	358~390	45~49	90	150
N45SH	1.33	13.3	1018	12.5	1592	20	342~366	45~49	90	150
N42SH	1.29	12.9	995	11.8	1592	20	318~342	43~46	90	150
N40SH	1.26	12.6	957	11.5	1592	20	302~326	40~43	90	150
N38SH	1.23	12.3	930	11.1	1592	20	287~310	38~41	90	150
N35SH	1.18	11.8	910	11.1	1592	20	263~287	36~39	90	150
N33SH	1.13	11.3	876	10.6	1592	20	247~270	33~36	90	150
N30SH	1.10	11.0	844	10.0	1592	20	223~247	31~33	90	150

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性能牌号 Performance grade	剩磁感应强度 Br Residual magnetic induction intensity		磁感矫顽力 Hcb Magnetic coercivity		内禀矫顽力 Hcj Intrinsic coercivity		最大磁能积 (BH) max maximum magnetic energy product		方形度 Hk/Hcj squareness	最高工作温度 T w L/D = 0.7 Maximum operating temperature
	最小值 minimum value		最小值 minimum value		最小值 minimum value		范围 range			
	T	kGs	kA/m	kOe	kA/m	kOe	kA/m ³	MGOe	%	°C
N28SH	1.05	10.5	756	9.5	1592	20	207~230	28~31	95	150
N55H	1.45	14.5	1035	13.0	1274	16	406~438	53~56	95	120
N52H	1.42	14.2	1035	13.0	1274	16	390~422	49~53	95	120
N50H	1.39	13.9	1035	13.0	1274	16	374~406	47~51	95	120
N48H	1.37	13.7	1018	12.8	1274	16	358~390	45~49	95	120
N45H	1.33	13.3	995	12.5	1353	17	342~366	45~49	95	120
N42H	1.29	12.9	957	12.0	1353	17	318~342	43~46	95	120
N40H	1.26	12.6	930	11.7	1353	17	302~326	40~43	95	120
N38H	1.23	12.3	910	11.4	1353	17	287~310	38~41	95	120
N35H	1.18	11.8	876	11.0	1353	17	263~287	36~39	95	120
N33H	1.13	11.3	844	10.6	1353	17	247~270	33~36	95	120
N30H	1.10	11.0	796	10.0	1353	17	223~247	31~33	95	120
N28H	1.05	10.5	756	9.5	1353	17	207~230	28~31	95	120
N55M	1.45	14.5	995	12.5	1035	13	406~438	51~55	95	100
N52M	1.42	14.2	995	12.5	1035	13	390~422	49~53	95	100
N50M	1.39	13.9	1035	13.0	1114	14	374~406	47~51	95	100
N48M	1.37	13.7	1012	12.7	1114	14	358~390	45~49	95	100
N45M	1.33	13.3	971	12.2	1114	14	342~366	43~46	95	100
N42M	1.29	12.9	938	11.8	1114	14	318~342	40~43	95	100
N40M	1.26	12.6	910	11.4	1114	14	302~326	38~41	95	100
N38M	1.23	12.3	876	11.0	1114	14	287~310	36~39	95	100
N35M	1.18	11.8	860	10.8	1114	14	263~287	33~36	95	100
N33M	1.13	11.3	796	10.0	1114	14	247~270	31~33	95	100
N30M	1.10	11.0	796	10.0	1114	14	223~247	28~31	95	100
N28M	1.05	10.5	756	9.5	1114	14	207~230	26~29	95	100
N55	1.45	14.5	836	10.5	875	11	406~438	51~55	95	80
N52	1.42	14.2	860	10.8	960	12	390~422	49~53	95	80
N50	1.39	13.9	860	10.8	960	12	374~406	47~51	95	80
N48	1.37	13.7	860	10.8	960	12	358~390	45~49	95	80
N45	1.33	13.3	836	10.5	960	12	342~366	43~46	95	80
N42	1.29	12.9	836	10.5	960	12	318~342	40~43	95	80
N40	1.26	12.6	836	10.5	960	12	302~326	38~41	95	80
N38	1.23	12.3	836	10.5	960	12	287~310	36~39	95	80
N35	1.18	11.8	836	10.5	960	12	263~287	33~36	95	80
N33	1.13	11.3	796	10.0	960	12	247~270	31~34	95	80