

SINOMAG

# 龙磁科技

致力磁性科技 转换世界能量

股票代码 (STOCK CODE) : 300835

安徽龙磁科技股份有限公司  
SINOMAG TECHNOLOGY CO.,LTD

地址: 安徽省合肥市政务区南二环路3818号天鹅湖万达广场1号写字楼23层  
Add: 23F, No.1 BLDG, Swan Lake Wanda Plaza, Hefei, Anhui, China  
电话/Tel: +86-551-62860011 62865330  
传真/Fax: +86-551-62865200  
网址/Wed: <http://www.sinomagtech.com>



安徽龙磁科技股份有限公司  
SINOMAG TECHNOLOGY CO.,LTD

# SINOMAG 龙磁科技

诚信 专注 共赢 奉献

安徽龙磁科技股份有限公司（股票代码：300835）创立于1998年，注册资本12013.9万元，主要从事永磁铁氧体及软磁系列产品的研发、生产和销售。年产各类磁性产品5万吨以上，在全球拥有5个生产基地和5个销售中心。

公司生产的高性能永磁铁氧体湿压磁瓦是直流电机的核心部件，广泛应用于汽车驱动，电气化系统以及车身等各个部位和附件中，如启动电机、ABS电机、雨刮器电机、摇窗电机等。助力于汽车的动力、环保、智能化、安全性和舒适性等新技术的创新发展。随着变频技术的应用和普及，高性能永磁铁氧体湿压磁瓦在家用电器行业的产业升级中也发挥了不可替代的作用。

自2020年以来，公司积极布局并建设软磁项目。搭建了软磁材料制备、磁芯生产（金属粉芯，铁氧体磁芯）等多个团队和生产线，依托永磁行业的多年积累，全力打造软磁产业链。

公司先后通过了IATF16949质量体系认证、ISO14001环境管理体系认证、ISO45001职业健康安全管理体系认证和ISO50001能源管理体系认证。经过多年努力，“龙磁”品牌在国内外市场已得到广泛认同，公司已成为全球众多知名电机生产企业及电源生产企业的主流供应商。

公司是国家级高新技术企业、国家级专精特新“小巨人”企业，注重技术创新，目前已授权200余项国家专利，拥有完全自主知识产权，涵盖高性能磁性材料主要生产技术环节。

公司奉行高质量、标准化和一致性的生产理念，奋力打拼、创造价值、服务客户、贡献社会。

Founded in 1998 with a registered capital of 120.139 million yuan, Sinomag is mainly engaged in the research, development, production and sales of permanent ferrite magnets and soft magnetic cores and components. Sinomag produces more than 50,000 tons of magnetic products annually, and has 5 production bases and 5 sales centers around the world.

The high-performance wet pressed ferrite segment magnets made by Sinomag are the core components of DC motors, and are widely used in various parts and accessories of automobile drives, electrification systems, and car bodies, such as starter motors, ABS motors, wiper motors, and window motors. These products contribute to the technological innovation and development of power, environmental protection, intellectualization, safety and comfort of automobiles. With the application and popularization of frequency conversion technology, the high-performance wet pressed ferrite segment magnets have also played an irreplaceable role in the industrial upgrading of the household appliance industry.

Since 2020, Sinomag has actively deployed and constructed soft magnetic projects. A number of teams and production lines have been established for the preparation of soft magnetic materials, magnetic core production (metal powder cores, ferrite cores). Relying on years of accumulation in the permanent magnet industry, we are striving to build a soft magnetic industry chain.

Sinomag has obtained IATF16949 Quality System Certification, ISO14001 Environmental Management System Certification, ISO45001 Occupational Health and Safety Management System Certification and ISO50001 Energy Management System Certification. After years of effort, the "Sinomag" brand has been widely recognized in domestic and foreign markets, and we have become one of the mainstream suppliers of many well-known motor manufacturers and power supply manufacturers in the world.

Sinomag is a state-level high-tech enterprise, a state-level specialization and special new "little giant" enterprise, focusing on technological innovation. So far, we have obtained more than 200 national patents and have completely independent intellectual property rights, covering the main production technology links of high-performance magnetic materials.

Sinomag pursues the production concept of high quality, standardization and consistency, and upholds the spirit of working hard, creating value, serving customers and contributing to society.



# 风华历程 匠心之旅

A journey of beauty a journey of ingenuity



**2022年** 安徽龙磁科技股份有限公司并购恩沃新能源科技（上海）有限公司  
Acquired controlling interest in EnverTech  
荣获国家级专精特新“小巨人”企业称号  
Won the title of National Specialized Special New "Little Giant" Enterprise

**2021年** 安徽龙磁新能源技术有限公司成立  
Sinomag New Energy Co.,Ltd was established

**2020年** 公司在创业板发行上市，股票代码300835  
Listed on Shenzhen GEM, stock code 300835  
龙磁日本株式会社成立  
Sinomag Japan Co., Ltd. was established  
安徽龙磁金属科技有限公司成立（生产金属磁粉芯及软磁铁氧体）  
Anhui Sinomag Metal Technology Co., Ltd. was established (producing powder cores and ferrite cores)

**2019年** 龙磁科技（越南）有限公司正式投产  
Sinomag Technology (Vietnam) Co., Ltd. was officially put into production

**2018年** 将军磁业全自动永磁铁氧体生产线建成  
The fully automatic permanent ferrite magnet production line of General Magnet was completed

**2016年** 龙磁科技（越南）有限公司成立（越南胡志明）  
Sinomag Technology (Vietnam) Co., Ltd. was established (Ho Chi Minh City, Vietnam)  
高性能永磁铁氧体湿压磁瓦产量达到2万吨  
The output of high-performance wet pressed ferrite segment magnet reached 20,000 tons  
省级工程技术中心成立  
Provincial Engineering Technology Center was established  
荣获国家级知识产权示范企业  
Won the title of National Intellectual Property Demonstration Enterprise  
龙磁科技SM-13高性能永磁铁氧体产品进入批量生产阶段  
SM-13 high-performance permanent magnet ferrite product has entered the mass production stage

**2015年** 公司成功登陆新三板，证券代码832388  
Listed on the NEEQ, stock code 832388

**2014年** 龙磁科技SM-10高性能永磁铁氧体产品进入批量生产阶段  
SM-10 high-performance permanent ferrite magnet entered the mass production stage

**2013年** 上海龙磁贸易有限公司成立（上海虹桥）  
Shanghai Sinomag Trading Co., Ltd. was established (Hongqiao, Shanghai)  
安徽龙磁精密器件有限公司成立（安徽庐江）  
Anhui Sinomag Precision Devices Co., Ltd. was established (Lujiang, Anhui)

**2012年** 安徽龙磁年产2万吨高性能永磁铁氧体原料工厂建成  
Annual output of 20,000 tons of high-performance permanent ferrite magnet raw material factory was established  
安徽龙磁通过ISO14001环境体系认证  
Obtained the ISO14001 environmental system certification

**2011年** 高性能永磁铁氧体湿压磁瓦产量达到1万吨  
The output of high-performance wet pressed ferrite segment magnet reached 10,000 tons

**2007年** 安徽龙磁整体变更为“安徽龙磁科技股份有限公司”  
Anhui Sinomag was changed to "Sinomag Technology Co., Ltd."  
德国金龙科技有限责任公司成立（德国法兰克福）  
Germany Golden Dragon Technology Co., Ltd. was established (Frankfurt, Germany)

**2004年** 安徽龙磁被认定为国家高新技术企业  
Recognized as a national high-tech enterprise  
安徽龙磁通过ISO/TS16949质量管理体系认证  
Obtained the ISO/TS16949 quality management system certification

**2003年** 上海龙磁电子科技有限公司成立（上海金山）  
Shanghai Sinomag Electronic Technology Co., Ltd. was established (Jinshan, Shanghai)

**2001年** 将军磁业通过ISO9001质量管理体系认证  
General Magnet obtained the ISO9001 quality management system certification

**1998年** 安徽龙磁科技有限责任公司成立（安徽庐江）  
Anhui Sinomag Technology Co., Ltd. was established (Lujiang, Anhui)

**1997年** 安徽金寨将军磁业有限公司成立（安徽金寨）  
Anhui General Magnet Co., Ltd. was established (Jinzhai, Anhui)

## 科学的生产 Scientific Production

龙磁奉行高质量、标准化和一致性的生产理念。公司依靠先进的生产设备，精湛的生产工艺，科学的生产管理制造出一流的产品。

Sinomag believes in "High-quality, Standardization and Consistency" in production. Relying on advanced production equipment, excellent technique and scientific production management, Sinomag offers world-class products.



# 卓越的品质 Excellent Quality

龙磁奉行：为顾客需求，我们兢兢业业，踏实认真；让顾客满意，我们一丝不苟，精益求精。公司拥有严格的质量控制体系和先进的检测设备，保障了产品的高品质，已经通过IATF16949质量体系认证、ISO14001环境管理体系认证、ISO45001职业健康安全管理体系认证和ISO50001能源管理体系认证。

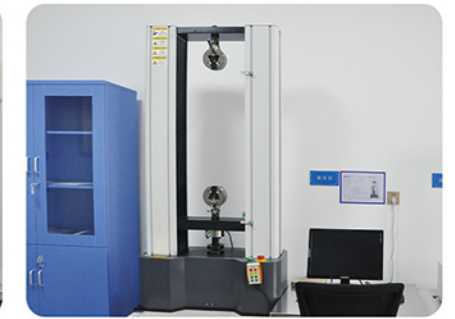
Sinomag has a strict quality control system and advanced testing equipment to ensure the high quality of products. We have obtained IATF16949 Quality System Certification, ISO14001 Environmental Management System Certification, ISO45001 Occupational Health and Safety Management System Certification and ISO50001 Energy Management System Certification.



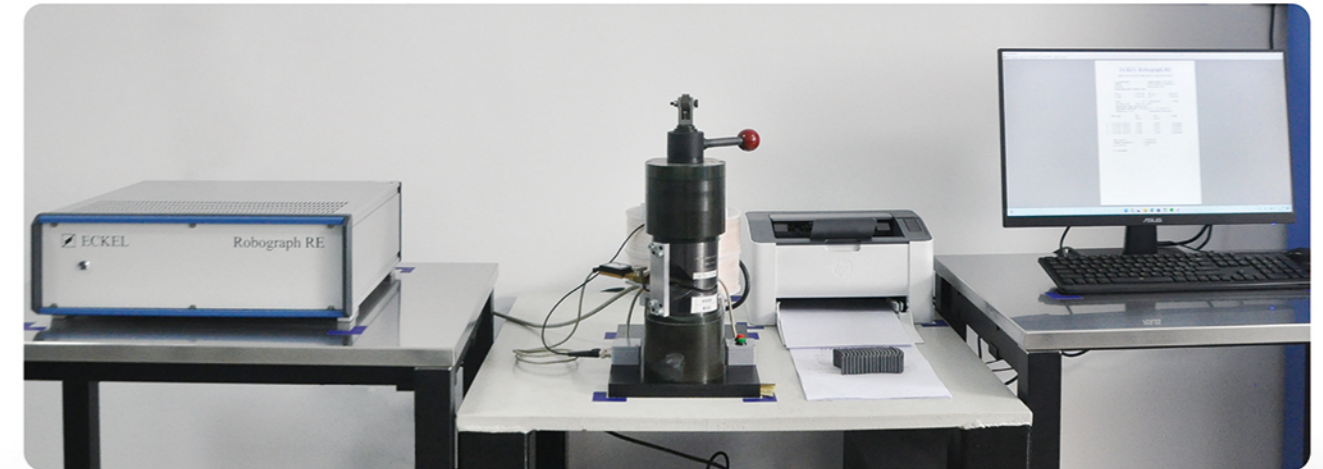
磁性测试仪  
Magnetic Property Test Machine



立式投影仪 Projector



强度测试仪  
Strength Test Machine



Robograph RE (德国产 Made in Germany)



体系认证证书 Certifications



部分发明专利 Some Invention Patents

# 强大的研发

## Strong R&D

龙磁自创立以来，始终坚持市场为导向，技术以立身，创新求发展。公司拥有较为完整的磁性材料及产品研发中心，在产品创新和研发上持续投入，以保持行业领先地位。公司注重加强校企合作，与多所国内知名高校建立了长期合作关系，共同进行技术开发，提高核心竞争力。

Since establishment, Sinomag has always believed that innovation is the key to growth and a market oriented technological development is the foundation of success. Sinomag has a comprehensive R&D center for magnetic materials and products to ensure a leading position in the industry. Sinomag has also established long-lasting relationships with prestigious universities, making joint development to enhance core competency.



光谱分析仪 XRF (日本产 Made in Japan)



轮廓仪 Profilometer (日本产 Made in Japan)



大型显微镜 Large Tool Microscope



# 永磁铁氧体 Permanent Ferrite

磁性材料是电子行业的基础功能材料，永磁铁氧体作为磁性材料的一个重要组成部分，在汽车工业、电子工业、信息产业、摩托车、电动工具等行业发挥着重要的作用。

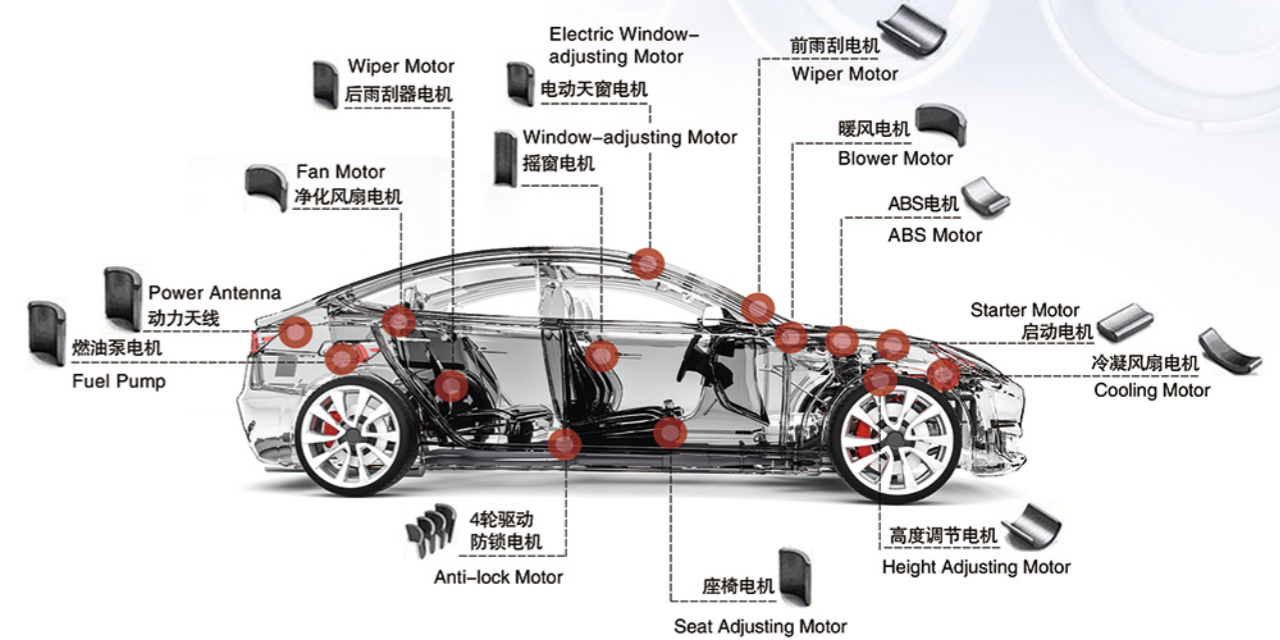
Magnetic materials are the basic functional materials in the electronics industry. As an important part of magnetic materials, permanent ferrite magnet plays an important role in the automobile industry, electronics industry, information industry, motorcycles, electric tools and other industries.



越南胡志明生产基地  
Vietnam Ho Chi Minh Production Base



## 燃油及新能源汽车 Fuel and New Energy Vehicles



## 健身器材 Fitness Equipment



## 变频家电 Home Appliances



## 电动工具 Electrical Tools



### 永磁铁氧体产品尺寸和公差 Permanent Ferrite Magnet Product Sizes & Tolerances

产品 Product	形状 Shape	尺寸 Size	未磨加工公差 Before Grinding	磨加工公差 After Grinding
湿压磁瓦 Wet Press Segment Magnet		外径R	$R_{-0.5}^{+1}$ mm	±0.1mm
		内径r	$r_{-0.5}^{+1}$ mm	±0.1mm
		轴高L	$L \pm 2\%$	±0.2mm
		弦宽W	$W \pm 2\%$	±0.2mm
		厚度T	$T_{-0.5}^{+1}$ mm	±0.1mm
		高度H	$H_{-0.5}^{+1}$ mm	±0.2mm
湿压方块 Wet Press Block Magnet		长度L	$L \pm 2\%$	±0.2mm
		宽度W	$W \pm 2\%$	±0.2mm
		厚度T	$T \pm 1.0$ mm	±0.1mm

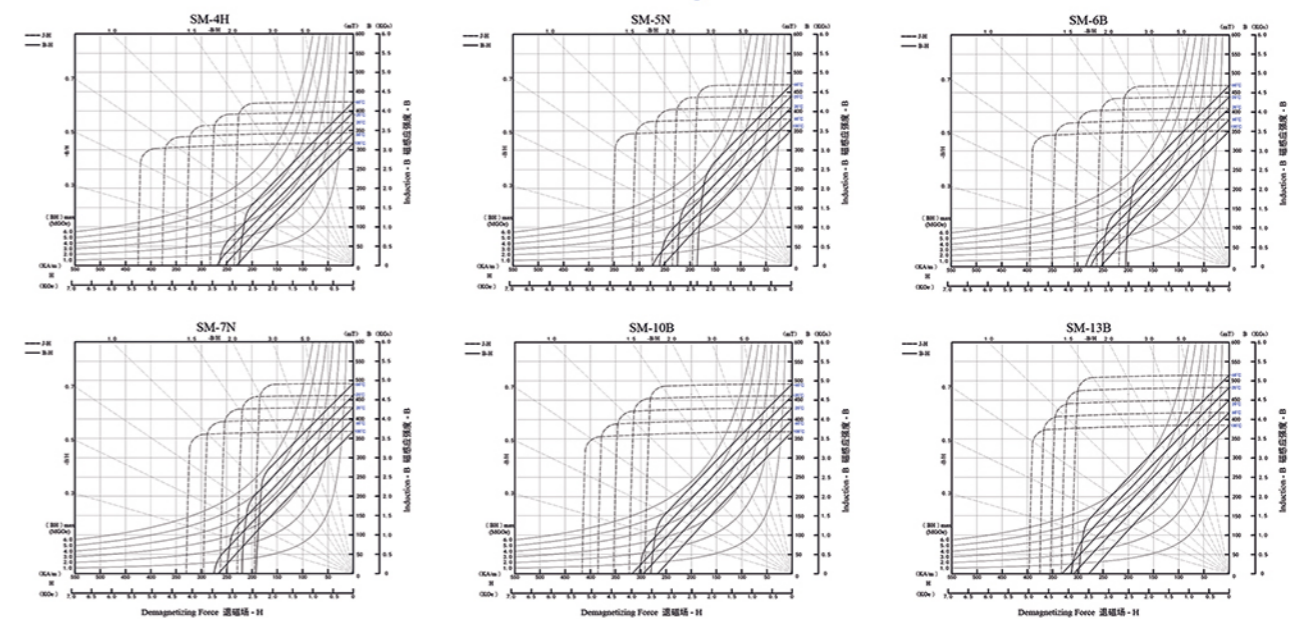
### 永磁铁氧体物理特性 Permanent Ferrite Magnet Physical Characteristics

居里温度 Curie Temperature	°C	450
最高工作温度 Max Operating Temperature	°C	250
硬度 Hardness	Hv	>530
密度 Density	g/cm <sup>3</sup>	4.8-5.1
回复磁导率 Relative Recoil Permeability	μ <sub>rec</sub>	1.05-1.1
剩磁温度系数 Temperature Coefficient of Br	%/°C	-0.18
内禀矫顽力温度系数 Temperature Coefficient of iH <sub>c</sub>	%/°C	0.11-0.40
抗弯强度 Anti-Bending Strength	N/m <sup>2</sup>	$(0.5-0.9) \times 10^8$
抗压强度 Anti-Compressive Strength	N/m <sup>2</sup>	$\geq 6.9 \times 10^8$
抗拉强度 Anti-Tensile Strength	N/m <sup>2</sup>	$(0.2-0.5) \times 10^8$
比热 Specific Heat	J/kg.K	600-900
电阻率 Resistivity	Q.cm	$>10^4$

### 龙磁材料性能牌号表 Sinomag Material Grades

Grade 牌号	Magnetic Properties 磁性能							
	Remanence 剩磁		Coercivity 矫顽力		Intrinsic Coercivity 内禀矫顽力		Max. Energy (BH) 最大磁能积	
	Br (MT)	Br (GS)	Hcb (KA/m)	Hcb (Oe)	Hcj (KA/m)	Hcj (Oe)	(BH) max (KJm3)	(BH) max (MGOe)
SM4H	360-380	3600-3800	255-278	3200-3500	318-342	4000-4300	25.5-27.9	3.2-3.5
SM4E	340-360	3400-3600	255-278	3200-3500	358-382	4500-4800	22.3-24.7	2.8-3.1
SM5N	400-420	4000-4200	246-270	3100-3400	263-286	3300-3600	31.0-33.4	3.9-4.2
SM5B	390-410	3900-4100	255-278	3200-3500	270-294	3400-3700	30.2-32.6	3.8-4.1
SM6N	410-430	4100-4300	250-274	3150-3450	258-282	3250-3550	32.6-35.0	4.1-4.4
SM6B	400-420	4000-4200	270-294	3400-3700	295-318	3700-4000	31.8-34.2	4.0-4.3
SM6H	390-410	3900-4100	286-310	3600-3900	310-334	3900-4200	30.2-32.6	3.8-4.1
SM7N	420-440	4200-4400	246-270	3100-3400	251-275	3150-3450	34.2-37.4	4.3-4.7
SM7B	410-430	4100-4300	290-313	3650-3950	306-330	3850-4150	31.8-35.0	4.1-4.4
SM7H	390-410	3900-4100	290-314	3650-3950	346-370	4350-4650	29.6-32.6	3.7-4.1
SM10N	430-450	4300-4500	270-294	3400-3700	275-299	3450-3750	35.0-38.1	4.4-4.8
SM10B	420-440	4200-4400	302-342	3800-4300	342-366	4300-4600	33.4-36.6	4.2-4.6
SM10H	410-430	4100-4300	294-334	3700-4200	380-406	4800-5100	31.8-35.0	4.1-4.4
SM13N	450-470	4500-4700	278-302	3500-3800	298-322	3750-4050	38.1-41.4	4.8-5.2
SM13B	440-460	4400-4600	302-342	3800-4300	342-366	4300-4600	35.0-38.1	4.4-4.8
SM13H	430-450	4300-4500	302-342	3800-4300	380-406	4800-5100	33.4-36.6	4.2-4.6

### 永磁铁氧体退磁曲线 Permanent Ferrite Magnet B-H Curves





## 金属软磁粉芯 Magnetic Powder Core

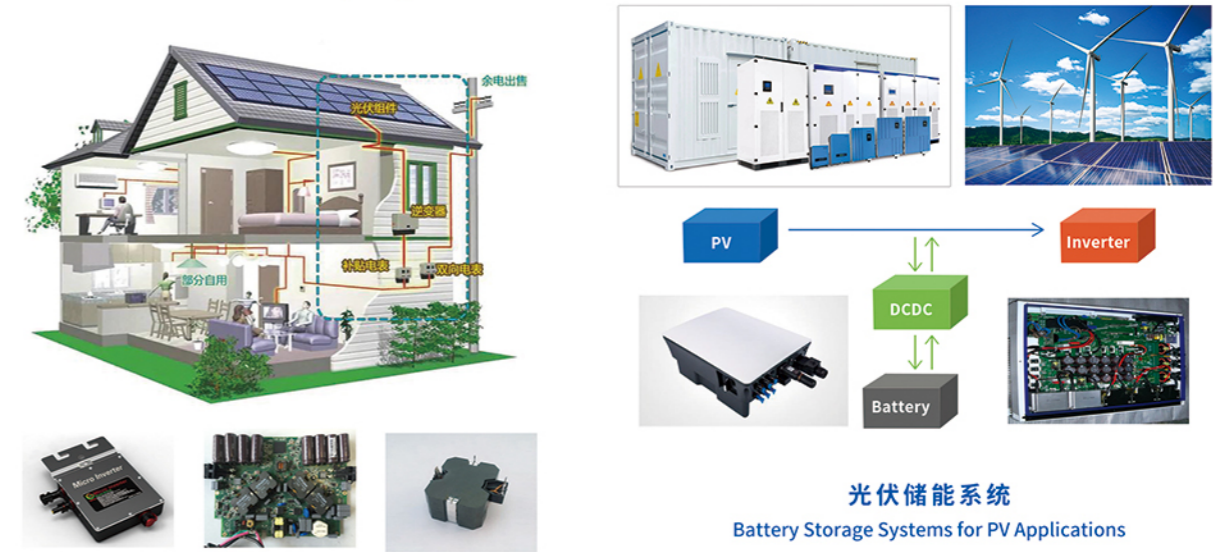
金属软磁粉芯是一种复合软磁材料（含分布式气隙），广泛应用于新能源汽车、5G通讯、光伏、储能、风力发电、家电等领域。进入21世纪，电子元器件的高频化、小型化为具有高BS、低损耗的软磁粉芯提供了广阔的市场空间。



Magnetic powder core is a composite soft magnetic material (including distributed air gap), which is widely used in new energy vehicles, 5G communications, photovoltaics, energy storage, wind power generation, home appliances and other fields. In the 21st century, the high frequency and miniaturization of electronic components provides a broad market space for soft magnetic powder cores with high BS and low loss.



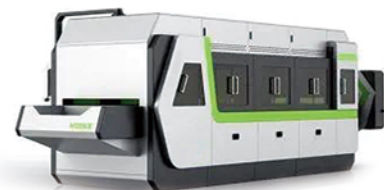
### 屋顶光伏系统中的微型逆变器 Microinverters for Rooftop PV System



轨道交通  
Rail Transit



新能源汽车及充电桩  
New Energy Vehicles and Charging Piles



工业机床  
Industrial Machine Tools



医疗设备  
Medical Equipment



噪声滤波器  
Noise Filters

## 软磁铁氧体磁芯 Ferrite Core

在高频下具有高磁导率、低损耗等特点，并且具有批量生产容易、性能稳定、机械加工性能高，可利用模具制成各种形状的磁芯，特别是成本低等特点，而迅速推广应用于光伏、储能、新能源汽车、通信、家电等领域。



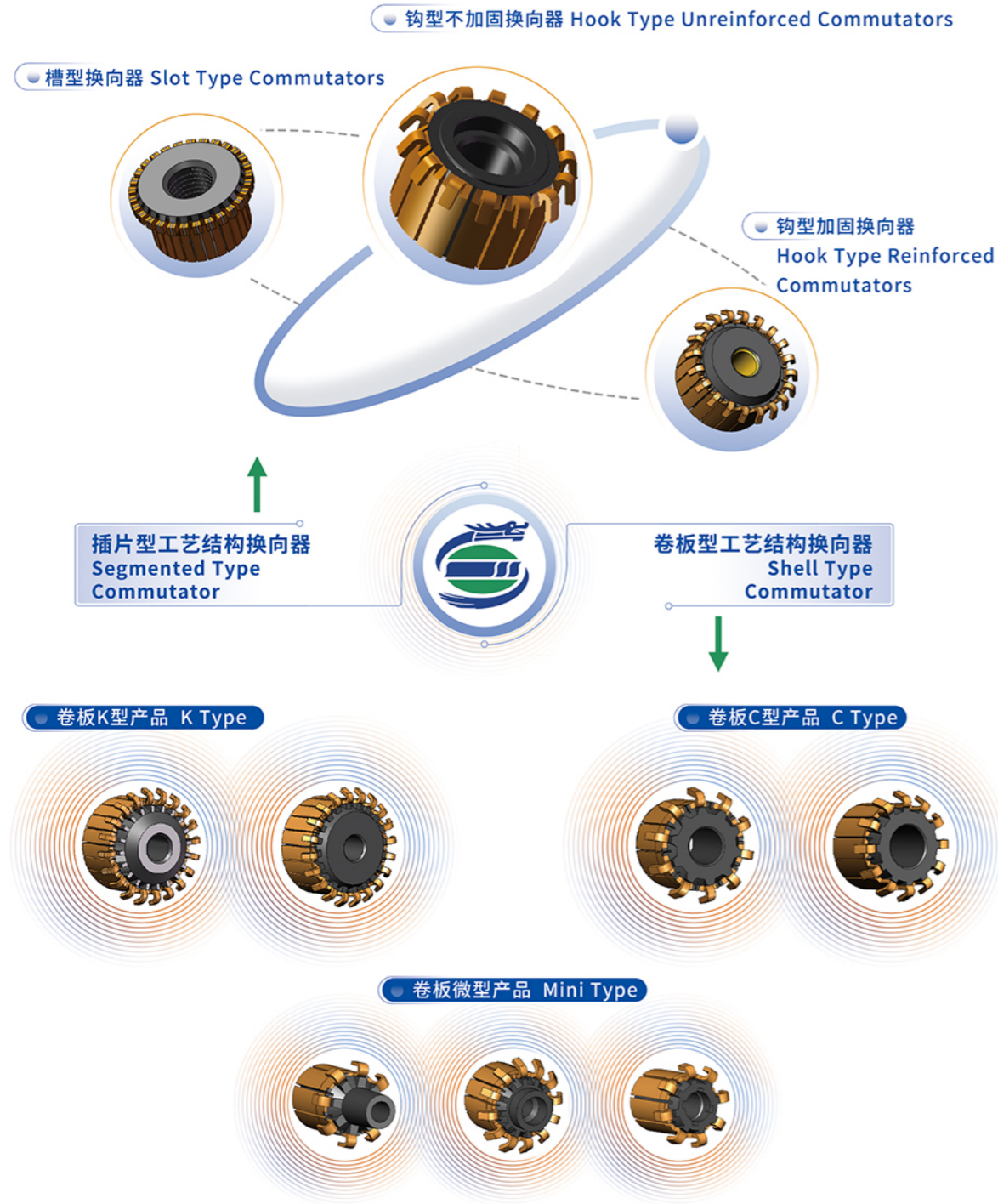
Ferrite core has the characteristics of high magnetic permeability and low loss at high frequency, and has the advantages of being easy to be made in mass production, stable performance, high mechanical processing performance, available in various shapes and low cost. It has been rapidly promoted and applied in photovoltaics, energy storage, new energy vehicles, communications, home appliances and other fields.



# 换向器

亦称“整流子”，是直流电机、交流串激电动机上作为电流换向，为了能够让其持续转动下去的一个部件，换向器是电机的核心部件之一。

**Commutator** is used in DC motors and AC series motors as current commutation to allow the motor to rotate continuously. The commutator is one of the core components of the motor.



# Busbar

是一种多层复合结构连接件，具有可重复电气性能、低阻抗、抗干扰、节省空间、装配快捷的大功率模块化连接结构部件，我们习惯称为连接器。广泛用于汽车工业、变频家电、高端医疗设备的无刷电机中，新能源汽车三大核心件驱动电机、电控、电池都需要用到连接器，我们称之为汽车连接器。

**Busbar** is a multi-layer composite structure connector with repeatable electrical performance, low impedance, anti-interference, space saving, and quick assembly. This kind of high-power modular connection structure component is commonly called a connector. Busbar is widely used in brushless motors in the automotive industry, frequency conversion home appliances, and high-end medical equipment. It can also be used in such three core components of new energy vehicles as drive motors, electronic controls, and batteries. Here we call them automotive connectors.

