



中国化学

中化学东华(安徽)新材料有限公司

CNCEC ADVANCED MATERIALS (ANHUI) CO., LTD.

为材料赋能 · 让世界炫彩

致力于成为推动石墨烯行业技术革命的领航企业

EMPOWERING MATERIALS, DAZZLING THE WORLD
COMMITTED TO BECOME A LEADING ENTERPRISE TO
PROMOTE THE TECHNOLOGICAL REVOLUTION OF GRAPHENE INDUSTRY

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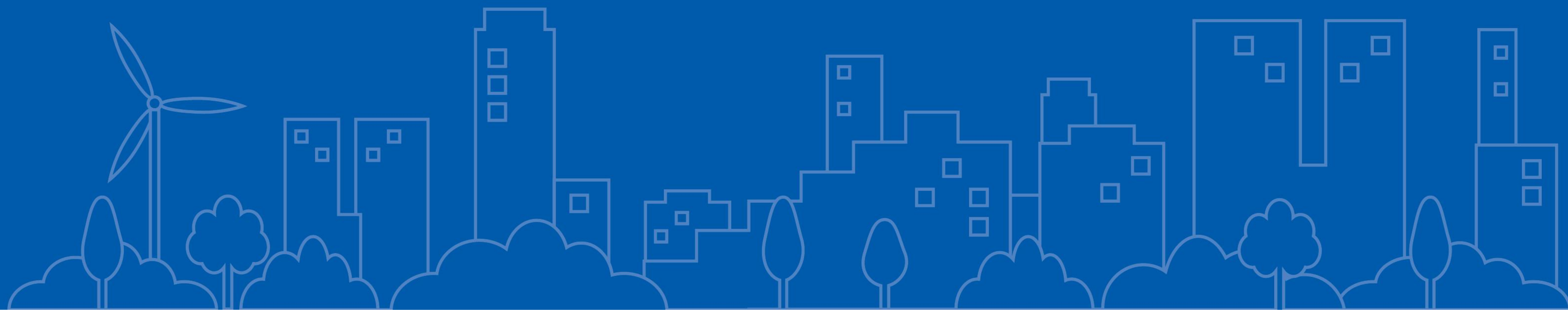
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01

关于我们 企业沿革

1963 建院淮南

在安徽淮南成立化学工业部第三设计院

80年代初成为全国第一批勘察设计单位企业化试点单位

1987 搬迁合肥

1987年全院搬迁合肥

1993年推行设计新体制改革与国际接轨

90年代中后期从单一咨询设计扩展至总承包全过程服务

2007 改制上市

2000年9月开始主体改制实施主辅分离

2001年7月中国化学东华公司成立并挂牌运营

2007年7月12日在深交所挂牌上市

2016 绚丽东华

上市以来公司营业收入和利润实现快速双增长

落实生产经营一体化加速信息化建设

在勘察设计企业中始终位居百强之列

2022 崭新东华

“十四五”新征程着力建设具有国际竞争力的综合性工程公司

构建一个基本盘+三纵三横的发展战略

2024 实业东华

2024年12月成立中化学东华(安徽)新材料有限公司

承载首批中央企业科技成果应用拓展工程历史使命

服务中国化学“135战略”，助力中国化学打造世界一流精细化工企业

01

关于我们
·
股东情况

东华工程科技股份有限公司

东华工程科技股份有限公司（简称“中国化学东华公司”）位于中国安徽合肥，隶属于中国国务院国资委直属中国化学工程集团有限公司。中国化学东华公司源于1963年成立的原中国化学工业部第三设计院，2001年实施股份制改造，2007年在深圳证券交易所成功上市，是中国工程勘察设计行业较早进行股份制改造并上市的现代科技型企业。

East China Engineering Science and Technology Co., Ltd. (abbreviated as "East China Engineering") is located in Hefei, Anhui Province, China. It is a subsidiary of China National Chemical Engineering Group Corporation Ltd., under the State-owned Assets Supervision and Administration Commission of the State Council (SASAC).

ECEC originated from the 3rd Design Institute of the Ministry of Chemical Industry, established in 1963. It underwent shareholding system reform in 2001 and was successfully listed on the Shenzhen Stock Exchange in 2007. It is one of the earlier modern technology enterprises in China's engineering survey and design industry to carry out shareholding system reform and go public.

1963 年
原化三院成立

2007 年
中国化学东华公司上市



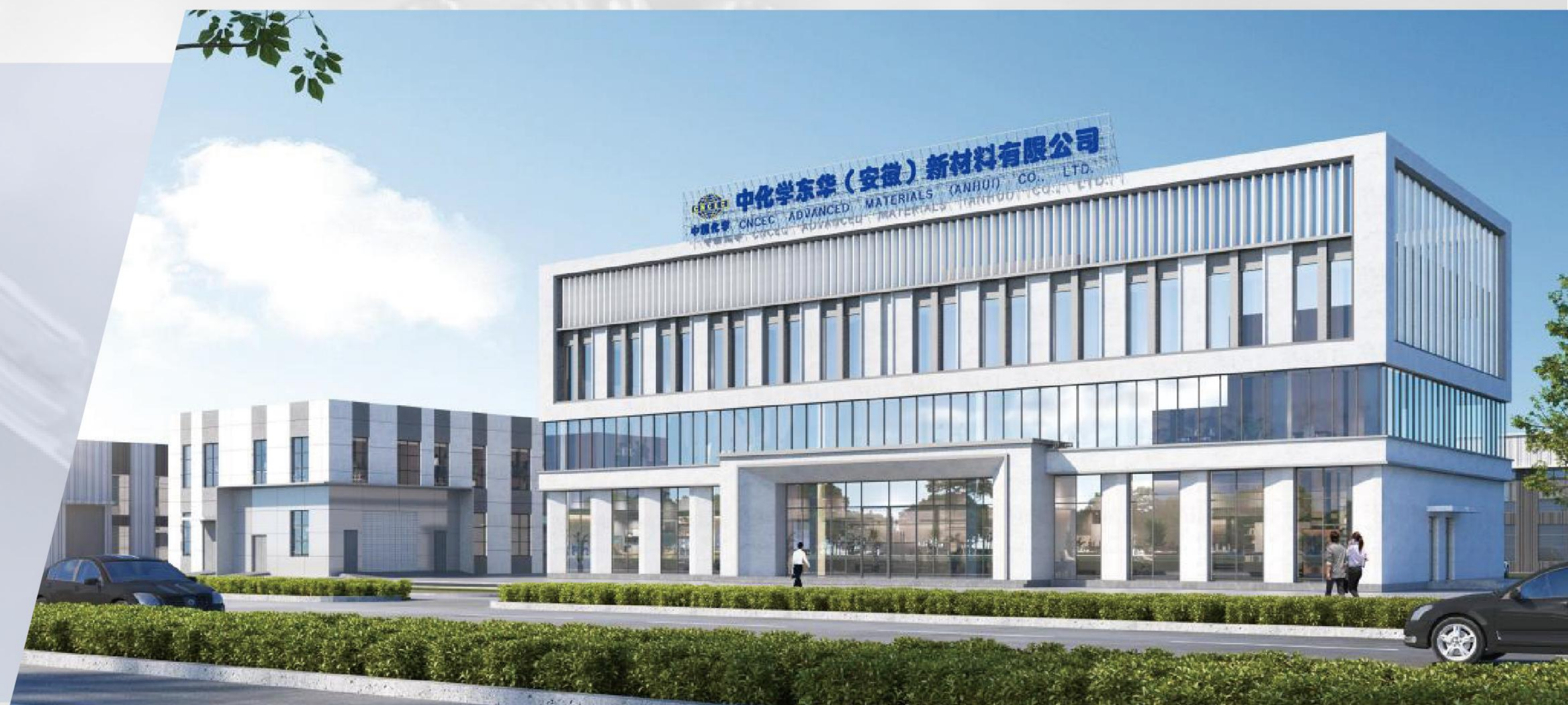
为再造一个 更高质量的中国化学 贡献力量

在“双碳”背景下，中国化学东华公司坚定“一个基本盘+ 三纵三横”发展战略，聚焦技术集成、工程承包、投资运营三大定位，纵向推进“差异化、实业化、国际化”发展战略，横向布局“新材料、新能源、新环保”产业领域，正在加快建设具有国际竞争力的综合性工程公司。

公司以“T+产业”模式推动中国化学实业产业高端化、智能化、绿色化转型升级，不断提升企业技术水平和行业技术标准，打造高端化学品和先进材料供应商，为再造一个更高质量的中国化学贡献力量。

Under China's "dual carbon" goals, ECEC adheres to its development strategy of "One Core Business + Three Verticals and Three Horizontals", focusing on three key pillars—technology integration, engineering contracting, and investment operation. Vertically, it promotes the development strategy of "differentiation, industrialization and internationalization", and horizontally lays out the industrial fields of "new materials, new energy, and new environmental protection". ECEC is accelerating the construction of a globally comprehensive engineering company.

ECEC drives the high-end, intelligent and green transformation of China's chemical industry through the "T+ Industry" model, continuously enhances technological level and industry technical standards, aims to become a leading supplier of high-end chemicals and advanced materials, and contributes to the creation of a higher-quality China's chemical industry.



工程设计 综合资质甲级 业务横跨工程 设计21个行业

中国化学东华公司是拥有工程设计综合资质甲级的企业，业务横跨工程设计21个行业，可承接国内外总承包、项目管理及技术服务。

公司凭借完善管理体系，确保项目高效高质交付。作为行业创新引领者，东华科技推动技术革新与标准制定，助力行业发展。

ECEC has a Class A comprehensive qualification for engineering design. Its business covers 21 industries in engineering design, and can undertake domestic and international general contracting, project management and technical services. ECEC ensures the efficient and high-quality delivery of projects by its sound management system. As an innovation in the industry, ECEC promotes technological innovation and standard formulation, and contributes to the development of the industry.



国资央企解决方案

中化学东华(安徽)新材料有限公司(简称“中国化学东华安徽新材公司”)由中国化学工程集团有限公司所属东华工程科技股份有限公司全资控股,是一家以创新驱动、技术领先的高新技术企业。

公司凭借卓越的技术实力和前瞻性的战略布局,致力于成为推动石墨烯行业技术革命的领航者,提供战略性新兴产业发展的“国资央企解决方案”。

Anhui Advanced Material Co., Ltd is wholly-owned by ECEC, which belongs to China National Chemical Engineering Corporation (CNCEC for short). It is a high-tech enterprise driven by innovation and leading in technology.

With its outstanding technical strength and forward-looking strategic layout, the company aims to become a leader in promoting the technological revolution in the graphene industry and provide "state-owned enterprise solutions" for the development of strategic emerging industries.



公司地址

中国化学东华安徽新材公司位于合肥市新站区通宝路与珠城西路交口东北角，占地49亩。公司投资建设碳基高性能材料产业示范装置、中国科大+东华科技联合创新实验室、战新产业+未来产业概念验证中心、石墨烯技术研究和产业孵化平台等。

一期建设内容包含首台套200吨/年气相合成法石墨烯粉体联产4000吨/年石墨烯功能浆料产业示范生产线，并配套建设综合楼、成品及原料库房、公辅配套设施等。

Anhui Advanced Material Co., Ltd is located at the northeast corner of the northeast corner of Tongbao Road and Zhucheng West Road in Xinzhan District in Hefei, covering an area of 49 acres. The company has invested in the construction of a carbon-based high-performance materials industrial demonstration facility, a joint innovation laboratory of the University of Science and Technology of China and ECEC, a concept verification center for strategic emerging industries and future industries, as well as a graphene technology research and industrial incubation platform, etc.

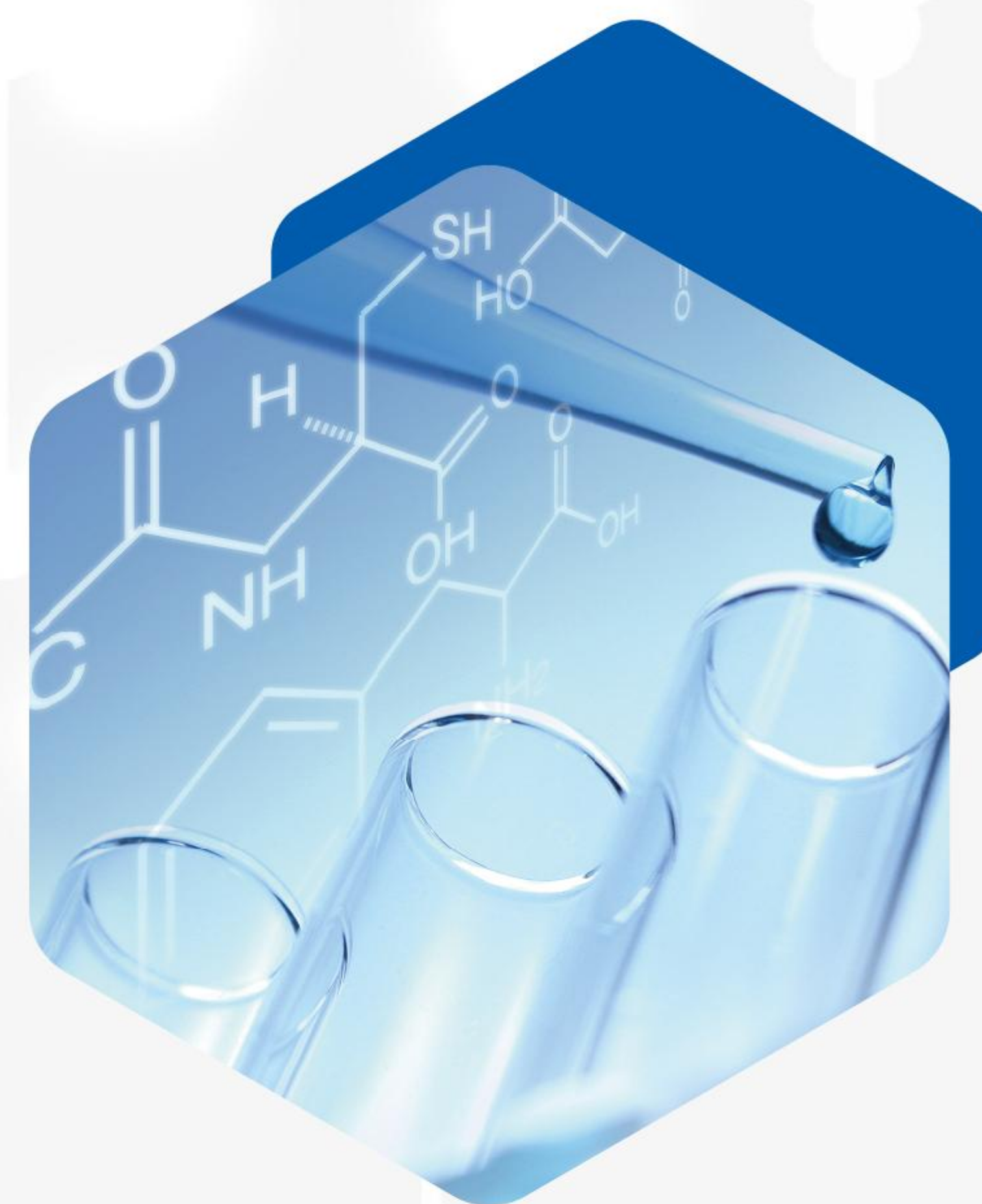
The first-phase of construction includes the first industrial demonstration production line for 200 ton/year gas-phase synthesis method graphene powder co-production 4,000 ton/year graphene functional slurry, and is also supported with office building, finished product and raw material warehouses, public facilities, etc.



向客户提供定制化 石墨烯以及石墨烯赋能新材料的 技术解决方案和产品

中国化学东华安徽新材公司致力于向客户提供定制化石墨烯以及石墨烯赋能新材料的技术解决方案和产品,以创新技术驱动高质量、高一致性气相合成法石墨烯的低成本、大规模生产,从原料供应端推动石墨烯产业链的高质量发展,为石墨烯的广泛应用奠定基础。公司通过产品创新,全方位推动产业链上下游的深度融合与协同发展。

Advanced Material (Anhui) Co., Ltd. is committed to providing customers with customized fossil graphene and graphene empowered new materials technology solutions and products, driving low-cost and large-scale production of high-quality and high consistency gas-phase synthesis graphene with innovative technology, promoting the high-quality development of the graphene industry chain from the raw material supply end, and laying the foundation for the widespread application of graphene. The company promotes the deep integration and coordinated development of the upstream and downstream of the industrial chain through product innovation.



01

高性能石墨烯
功能涂料

High-performance
Graphene Functional
Coating

02

石墨烯基金属
复合材料

Graphene based metal
composite materials

06

石墨烯基
生物新材料

Graphene-based
bio-materials

六大
产业链

03

高性能石墨烯
电池材料

High-performance
Graphene Battery
Materials

05

新型石墨烯
热管理材料

New Graphene Thermal
Management Materials

04

石墨烯改性
高分子材料

Graphene Modified
Polymer Materials

气相合成法 石墨烯粉体连续生产工艺

中国化学东华安徽新材公司拥有自主知识产权的气相合成法石墨烯粉体连续生产工艺,解决了当前石墨烯大规模量产难度大、品质低、成本高的难题。本技术易于实现石墨烯装置大型化,在高一致性和成本方面具有突出优势。“气相合成法石墨烯生产工程”入选国务院国资委、工信部、国家能源局2024年《中央企业科技成果应用拓展工程首批清单》,为石墨烯的广泛应用奠定了坚实的基础。

Advanced Material (Anhui) Co., Ltd. has independently developed a gas-phase synthesis method for continuous production of graphene powder, which solves the difficulties of large-scale production, low quality, and high cost of graphene. This technology is easy to achieve large-scale graphene devices and has outstanding advantages in high consistency and cost. The "Gas phase Synthesis Graphene Production Project" has been selected as one of the first batch of central enterprise scientific and technological achievement application expansion projects by the State owned Assets Supervision and Administration Commission of the State Council, the Ministry of Industry and Information Technology, and the National Energy Administration in 2024, laying a solid foundation for the widespread application of graphene.

中央企业科技成果应用拓展工程
首批项目清单

序号	央企集团	项目名称
37	中国煤炭科工集团有限公司	人工智能+复杂条件煤矿综放工作面场景应用
38	中国机械科学研究总院集团有限公司	新能源汽车用锂电池隔膜生产线
39	中国化学工程集团有限公司	气相合成法石墨烯生产工程
40	中国建材集团有限公司	8.5代OLED玻璃基板生产线
41	中国有色矿业集团有限公司	超导材料研发测试平台
42	中国中车集团有限公司	时速200公里市域D型列车
43	中国交通建设集团有限公司	天山胜利隧道竖井掘进工程



中国石墨烯产业技术创新
战略联盟理事单位



中关村华清石墨烯产业
技术创新联盟会员单位



中国国际石墨烯材料应用博览会获奖





专利情况

石墨烯相关专利

共申请21项(发明专利14项, 实用新型4项)。

其中, 授权专利8项(5项发明和3项实用新型), 12项专利进入实审, 1项专利已受理。

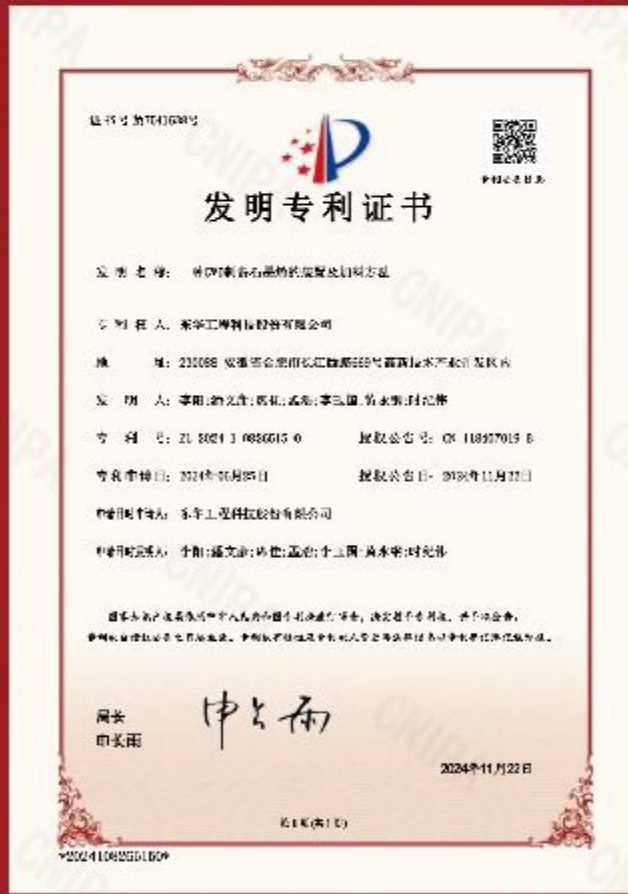
- 一种石墨烯包覆纳米铜颗粒复合材料的制备方法
- 一种石墨烯制备装置及方法
- 一种制备石墨烯的反应装置
- 一种石墨烯提纯装置
- 一种连续高温提纯石墨烯的装置
- 一种用于制备石墨烯的反应装置
- 一种石墨烯提纯装置
- 一种用于锂硫电池正极的石墨烯复合材料的制备方法
- 一种制备掺杂石墨烯的装置及方法
- 一种基于鼓泡法的石墨烯制备装置中积碳的清除方法
- 一种高温气固输送管道
- 一种连续酸洗除去碳材料中金属杂质的方法
- 一种进气元件
- 一种进气元件
- 一种采用惰性石墨烯制备高分散性石墨烯浆料的方法
- 一种制备并收集石墨烯的方法
- 一种石墨烯的制备方法
- 一种CVD制备石墨烯的装置及加料方法
- 一种铜石墨烯/二维Mxenes复合材料及其制备方法、以及应用
- 一种煅烧提纯石墨烯的方法
- 一种以双子表面活性剂结合砂磨工艺制备石墨烯分散液的方法

发明	CN116372175B	2023.04.04	东华工程科技股份有限公司	授权
发明	CN116281981B	2023.04.04	东华工程科技股份有限公司	授权
实用新型	CN219823676U	2023.04.04	东华工程科技股份有限公司	授权
实用新型	CN219792506U	2023.04.23	东华工程科技股份有限公司	授权
实用新型	CN219907000U	2023.04.11	东华工程科技股份有限公司	授权
发明	CN117945395A	2024.03.27	东华工程科技股份有限公司	授权
发明	CN116654920A	2023.04.23	东华工程科技股份有限公司	实审
发明	CN116154160A	2023.04.04	东华工程科技股份有限公司	实审
发明	CN117504764A	2023.11.10	东华工程科技股份有限公司	实审
发明	CN117778992A	2023.12.26	东华工程科技股份有限公司	实审
发明	CN118030998A	2024.04.08	东华工程科技股份有限公司	实审
发明	CN118306973A	2024.04.16	东华工程科技股份有限公司	实审
发明	CN118183719A	2024.04.19	东华工程科技股份有限公司	实审
实用新型	202420829084.9	2024.04.30	东华工程科技股份有限公司	受理
发明	CN118324132A	2024.04.30	东华工程科技股份有限公司	实审(复审中)
发明	CN118164477A	2024.05.14	东华工程科技股份有限公司	授权
发明	CN118164478A	2024.05.14	东华工程科技股份有限公司	实审(复审中)
发明	CN118407019A	2024.06.25	东华工程科技股份有限公司	授权
发明	CN118812923A	2024.08.06	东华工程科技股份有限公司、安徽大学	实审
发明	CN118929647A	2024.08.28	东华工程科技股份有限公司	实审
发明	CN119284891A	2024.11.29	东华工程科技股份有限公司、安徽工业大学	实审

授权专利8项
(5项发明和3项实用新型)



12项专利进入实审

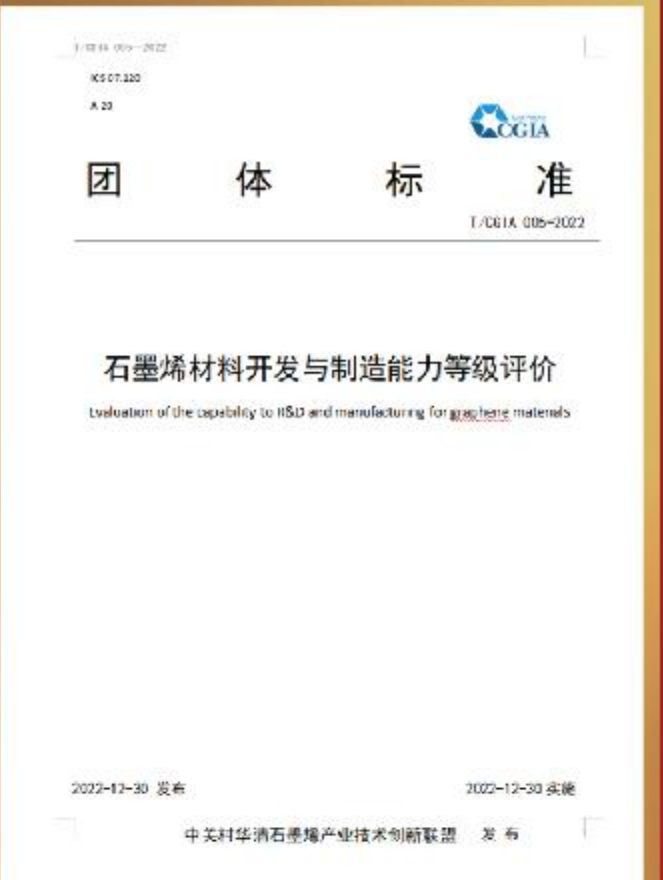
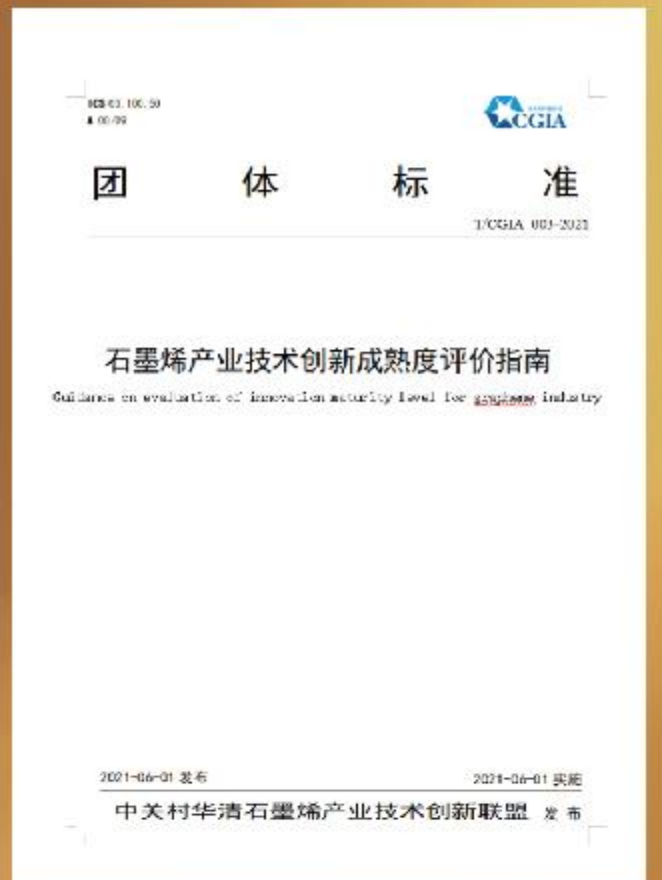


石墨烯及下游应用标准重要制定者

公司主编和参编了一系列石墨烯及下游应用产品标准、检测表征标准、设计标准、施工验收标准等

标准号	名称	生效
JT/T 722-2023	《公路桥梁钢结构防腐涂料技术条件》	2023
TR08057	CCS 船级社认证风力发电 《涂料产品认证实施专用规则》	2021
T/CSTM 00229-2020	《涂料中石墨烯材料的测定》扫描电镜 + 能谱法	2020
HG/T 5573-2019	《石墨烯锌粉涂料》	2020
工业和信息化部 重点推进产品目录	《重点新材料首批次应用示范指导目录》	2019
T/CSTM 00028	《石墨烯改性无溶性导电涂料》 表面电阻率 $1 \times 10^5 - 1 \times 10^{11}$	2019
ISO 12944-2017	Part 5 防护涂料体系 - 对于采用新技术解读实验室测试的结果至少达到 ISO 12944-6 的要求被验证是行之有效的新技术锌粉的含量不做要求	2017
工业和信息化部 国家发改委科技部	《关于加快石墨烯产业创新发展的若干意见》	2015
T/CHTS 20020-2022	《公路桥梁钢结构石墨烯锌粉防腐涂料》	2022
T/CPUMT 011-2023	《石墨烯水性防腐涂料》	2023

东华科技主/参编标准		
标准编号	标准名称	发布时间
GB50212-2014	《建筑防腐工程施工规范》	2015.1.1
GB/T50224-2018	《建筑防腐工程施工质量验收规范》	2019.4.1
HG/T20679-2014	《化工设备、管道外防腐设计规范》	2014.11.1
T/CGIA 006.1-2024	《石墨烯材料特性参数与测试方法---第1部分：CVD法薄膜》	2024.6.30
T/CGIA 006.2-2024	《石墨烯材料特性参数与测试方法---第2部分：粉体与浆料》	2024.6.30
T/CGIA 005-2022	《石墨烯材料开发与制造能力等级评价》	2022.12.30
T/CGIA 003-2021	《石墨烯产业技术创新成熟度评价指南》	2021.6.1
CECS116: 2000	《钟水玻璃防腐蚀工程技术规程》	2000.12.1
T/CECS 667-2020	《钢结构水性防腐涂料应用技术规程》	2020.9.1
待定	《石油化工钢结构冷喷（烯）锌涂装技术规范》	2025.12
待定	《冷喷烯锌》	2025.12
待定	《石油化工钢结构冷喷（烯）锌体系涂装技术规范（英文版）	2025.1.1
T/CGIA 036.1-2024	《石墨烯改性纤维--第1部分：分类、命名及标识》	2024.12.1
T/CGIA 036.2-2024	《石墨烯改性纤维--第2部分：鉴别与性能》	2024.12.1



Graphene

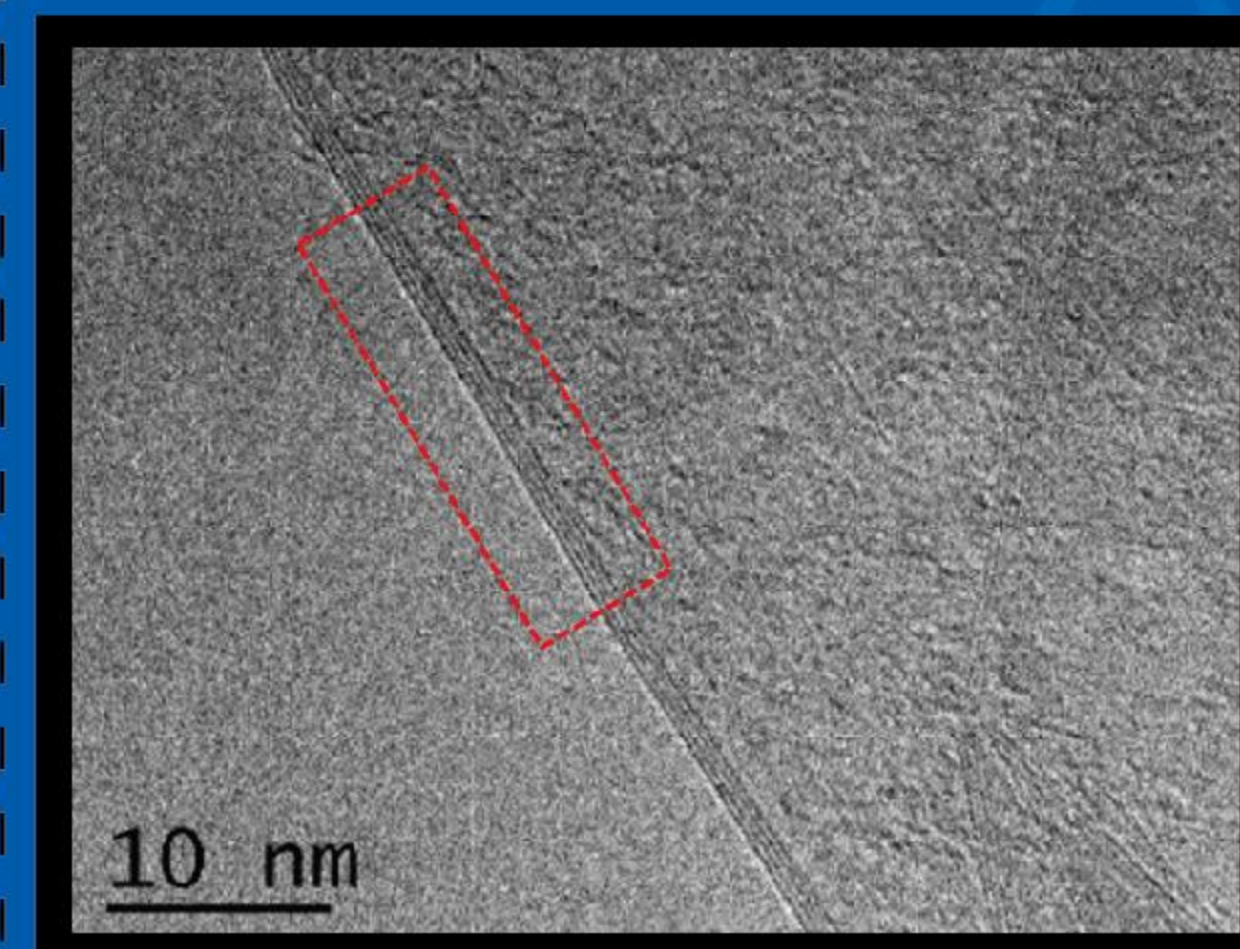
石墨烯

中国化学东华安徽新材公司通过气相合成法生产的石墨烯片径大、厚度均匀、层数可调、结构完整、无缺陷、强度高、散热性能好、导电性能好。

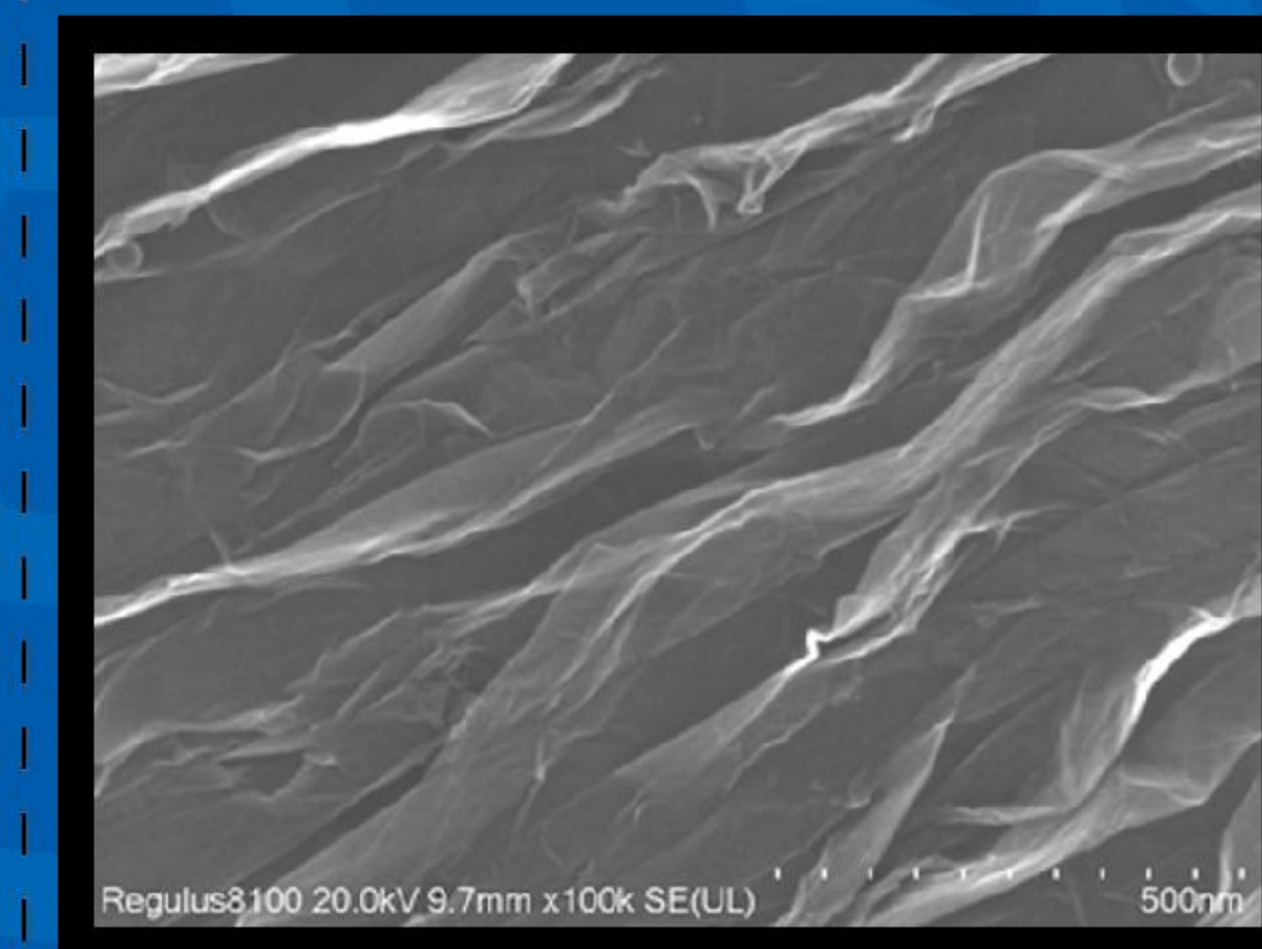
以天然气为原料的连续流程化气相合成法生产工艺确保了石墨烯产品的高一致性和工业规模商业化供应,可以为石墨烯赋能相关行业技术创新及产业化提供稳定、可靠的原料供应端保障。

The graphene sheets produced by Advanced Material (Anhui) Co., Ltd. through gas-phase synthesis have large diameter, uniform thickness, adjustable layers, complete structure, no defects, high strength, good heat dissipation performance, and good conductivity.

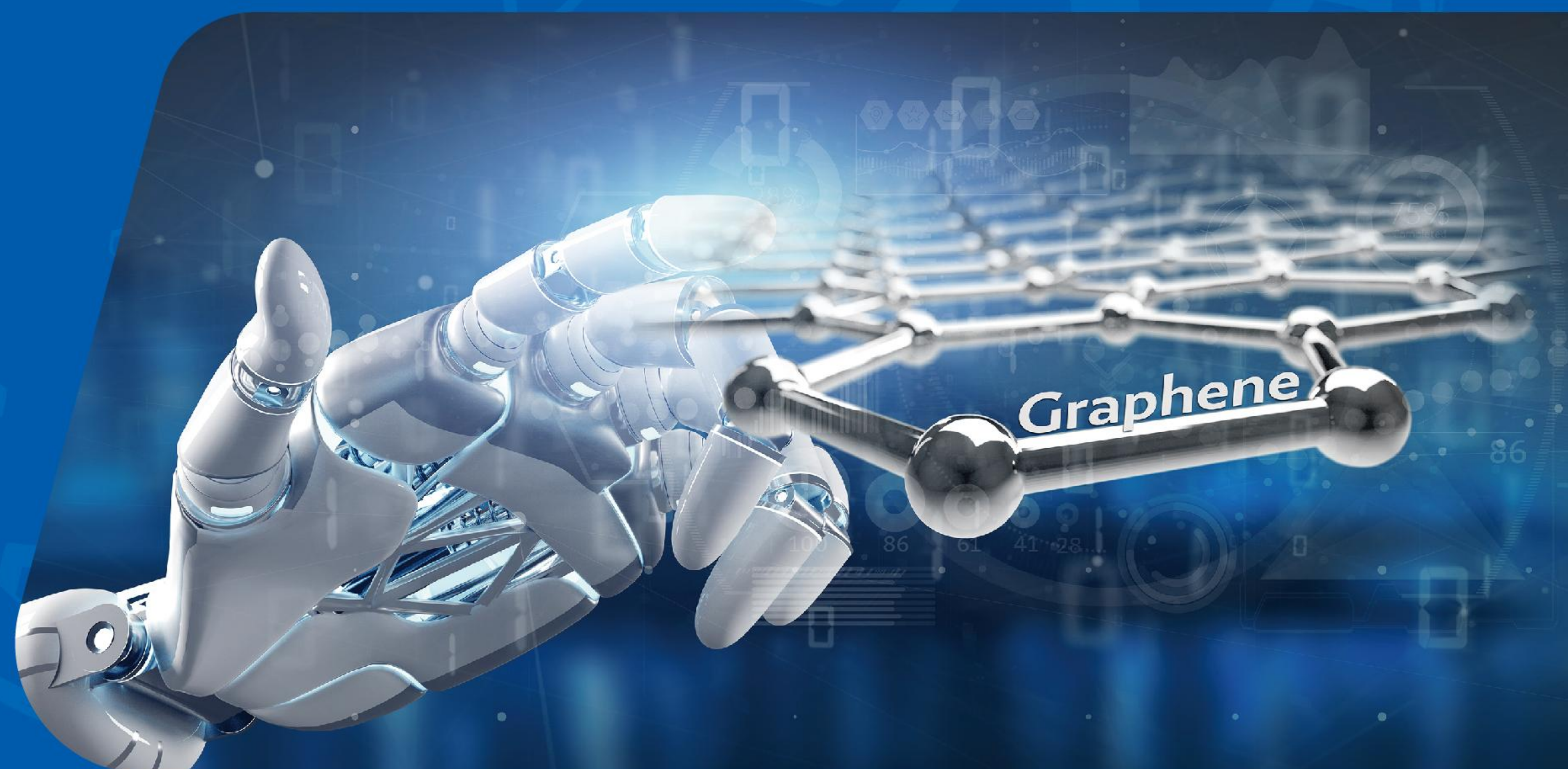
The continuous process gas-phase synthesis production process using natural gas as raw material ensures high consistency and industrial scale commercial supply of graphene products, which can provide stable and reliable raw material supply guarantees for graphene to empower technological innovation and industrialization in related industries.



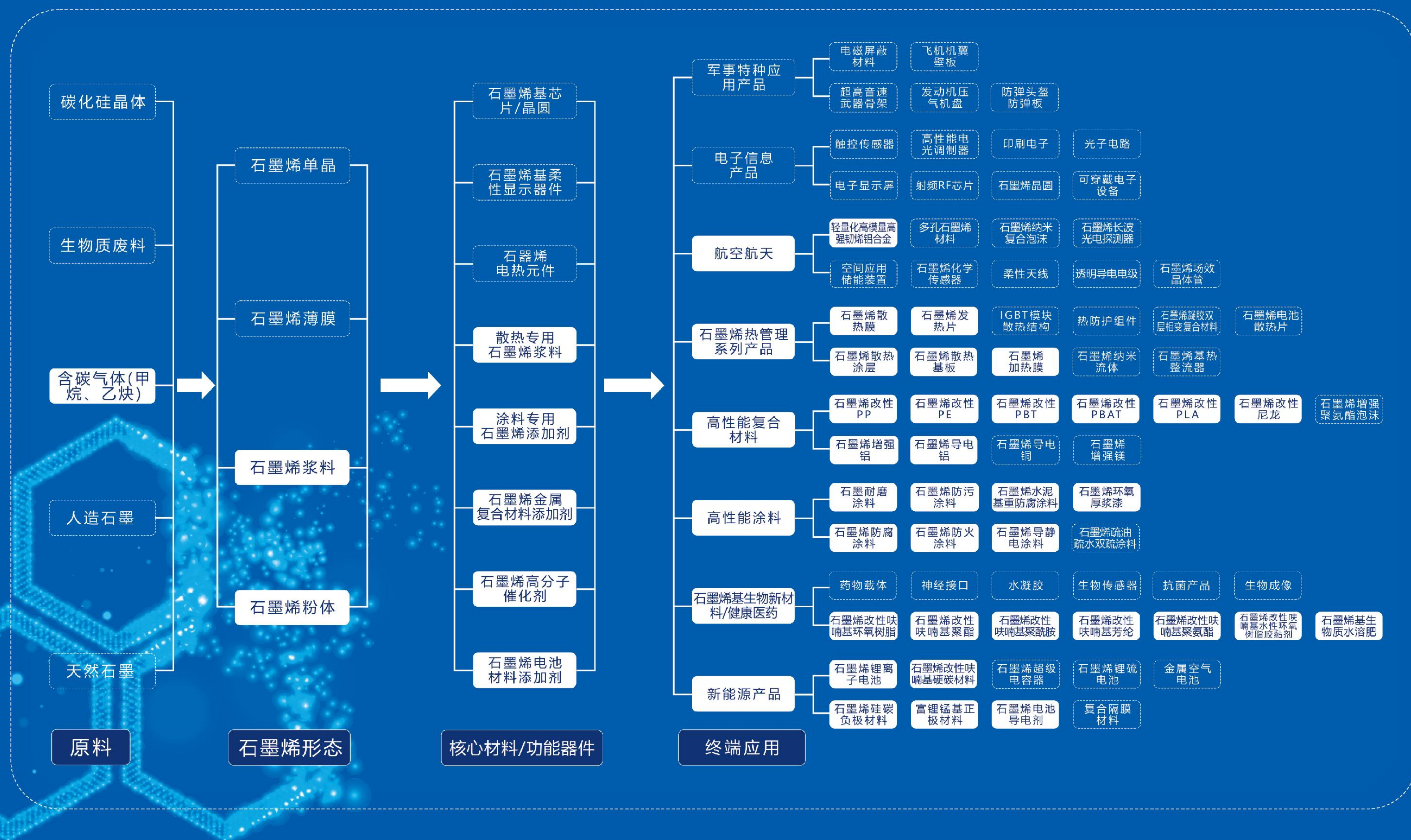
材料特点：
厚度10层以内(可调)



材料特点：
缺陷少, 厚度薄、片径大, 不易团聚



石墨烯产业链应用拓展图谱



01

产品领域
产品介绍

高性能石墨烯功能涂料

High-performance Graphene Functional Coating

打造新一代长效防腐一体化解决方案的服务商

Building a new-generation integrated long-lasting anti-corrosion solution provider

中国化学东华安徽新材公司致力于打造新一代长效防腐一体化解决方案的服务商,创新生产工艺控制措施,自主研发稳定且高性能的涂料专用石墨烯浆料,少量添加即可显著改善产品性能。

公司开发的系列石墨烯涂料产品,可覆盖石油化工、海洋工程、电力、新能源、交通、建筑等行业的长效防腐和特种防护应用场景,为相关行业提供绿色低碳的工业防护解决方案。

Advanced Material (Anhui) Co., Ltd. is committed to creating a new generation of long-term anti-corrosion integrated solutions service provider, innovating production process control measures, independently developing stable and high-performance graphene slurry for coatings, and significantly improving product performance with a small amount of addition.

The series of graphene coating products developed by the company can cover long-term anti-corrosion and special protection application scenarios in industries such as petrochemicals, marine engineering, power, new energy, transportation, and construction, providing green and low-carbon industrial protection solutions for related industries.



01

产品领域
产品介绍

高性能石墨烯功能涂料

High-performance Graphene Functional Coating

产品清单

石墨烯环氧锌粉涂料

石墨烯环氧厚浆漆

石墨烯防腐散热涂料

石墨烯玻璃鳞片面漆

石墨烯水泥基重防腐涂料

石墨烯导静电涂料

石墨烯耐磨防腐涂料

石墨烯防污涂料

石墨烯聚氨酯面漆

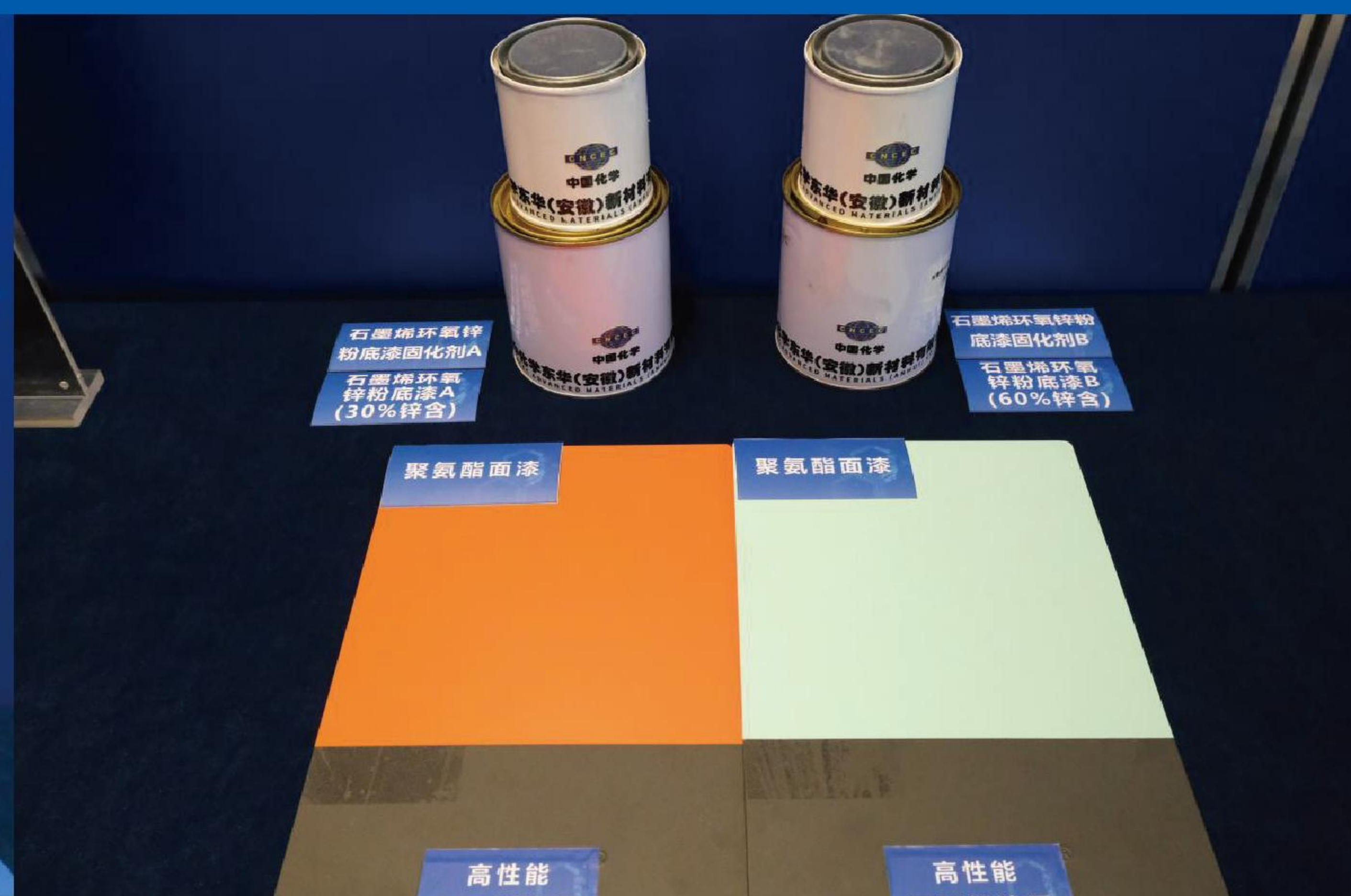
石墨烯环氧云铁中间漆

石墨烯防火涂料

石墨烯有机无机杂化涂料

性能指标

- 1 附着力优异
- 2 机械性能优异
- 3 耐腐蚀性能强
- 4 导电导热性能优异
- 5 在恶劣环境下优异的防护性能
- 6 耐火性能优异



01

产品领域
应用领域

高性能石墨烯功能涂料应用领域

High-performance graphene functional coating application areas

桥梁钢构

钢桥梁
厂房钢结构



石油化工

炼化装置
化学工程



电力能源

热电厂
新能源



船舶

客货船舶集装箱船舶
油气船舶
特种船舶



工业设备

油气设备
电力设备
制药设备



油气管道

输油管道
输气管道



海洋工程

海上油气平台
码头



集装箱

干货集装箱
冷冻集装箱
特种箱



02

产品领域
产品介绍

石墨烯基金属复合材料

Graphene based metal composite materials

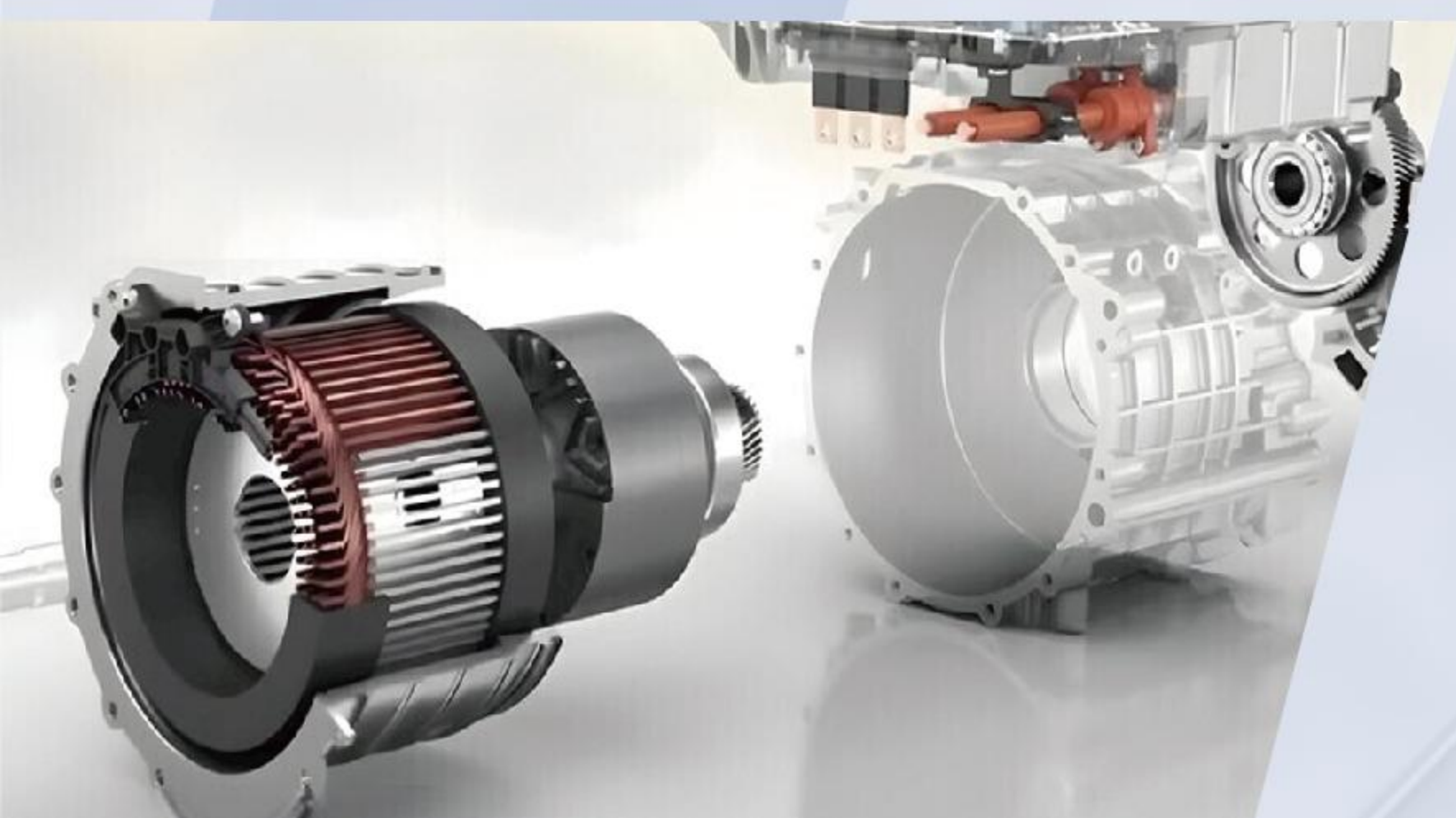
通过石墨烯的优异性能赋能铝合金基体，公司开发出高强度石墨烯铝复合材料和高导电石墨烯铝复合材料。

By empowering the aluminum alloy matrix with the excellent properties of graphene, the company has developed high-strength graphene aluminum composite materials and high conductivity calcium carbide graphene aluminum composite materials.

01
高强度
石墨烯铝
复合材料

Develop

02
高导电
石墨烯铝
复合材料



石墨烯基金属复合材料

Graphene based metal composite materials

高强度石墨烯铝复合材料

轻量化用高强度、高比刚度烯碳铝合金是由高强铝合金与石墨烯等高性能纳米碳复合而成的新一代金属基复合材料,其中石墨烯具有卓越的力学性能,其密度只有钢材的1/4,强度却超过钢材的200倍。少量的石墨烯被均匀分散到铝合金基体中,就能部分取代昂贵的合金元素,其比刚度高于铝锂合金,弹性模量可大于80GPa,并同时保持与传统铝合金接近的变形加工性能。其综合性能达到世界领先水平,可解决我国航天航空军工装备结构轻量化“卡脖子”材料难题,同时可进一步应用于新能源汽车、民用航天装备、消费电子等民用市场,应用前景广阔。

The lightweight high-strength, high-specific-stiffness graphene-aluminum alloy is a new generation of metal matrix composite material formed by combining high-strength aluminum alloy with high-performance nanocarbons such as graphene. Graphene possesses exceptional mechanical properties—its density is only one-fourth that of steel, yet its strength exceeds that of steel by 200 times. By uniformly dispersing a small amount of graphene into the aluminum alloy matrix, it can partially replace expensive alloying elements. The specific stiffness of this material surpasses that of aluminum-lithium alloys, with an elastic modulus exceeding 80 GPa, while maintaining deformation and processing performance comparable to traditional aluminum alloys.

With world-leading comprehensive performance, this material can address China's "bottleneck" challenges in structural lightweighting for aerospace and military equipment. Furthermore, it holds broad application prospects in civilian markets such as new energy vehicles, civil aerospace equipment, and consumer electronics.

高导电石墨烯铝复合材料

铝作为铜的下位替代材料,可被用于制备电子、电力设备。高导电石墨烯铝复合材料,能够进一步减少我国对进口铜的依赖,降低国产电器、电子设备成本,满足部分输电线对新型导线材料的需求,助力相关领域的科技进步、产业升级和经济增长,推动新质生产力发展。

公司开发的高导电石墨烯铝复合材料将有助于在导电材料方面取代一部分铜,进而减少我国对进口铜的依赖。此外,石墨烯铝复合材料还可能在减重方面取代一部分紫铜,其在远程通讯、航空航天、新能源、电气设备、输电电缆等国防装备领域有较大应用前景。相较于传统铝线,高导电石墨烯铝复合导线,可以降低电力传输过程中的线损10%以上,大幅提高输电效率。

As a lower-cost alternative to copper, aluminum can be used in the production of electronic and electrical equipment. Highly conductive graphene-aluminum composite materials can further reduce China's reliance on imported copper, lower production costs for domestic electrical and electronic devices, meet the demand for new conductive materials in power transmission lines, and drive technological progress, industrial upgrading, and economic growth in related fields - ultimately promoting the development of new quality productive forces.

The highly conductive graphene-aluminum composite material developed by our company will help replace some copper in conductive applications, thereby reducing China's dependence on copper imports. Additionally, graphene-aluminum composites may also replace some pure copper in weight-sensitive applications, showing significant potential in defense-related fields such as telecommunications, aerospace, new energy, electrical equipment, and power transmission cables.

Compared to traditional aluminum wires, highly conductive graphene-aluminum composite wires can reduce line losses in power transmission by over 10%, significantly improving power transmission efficiency.

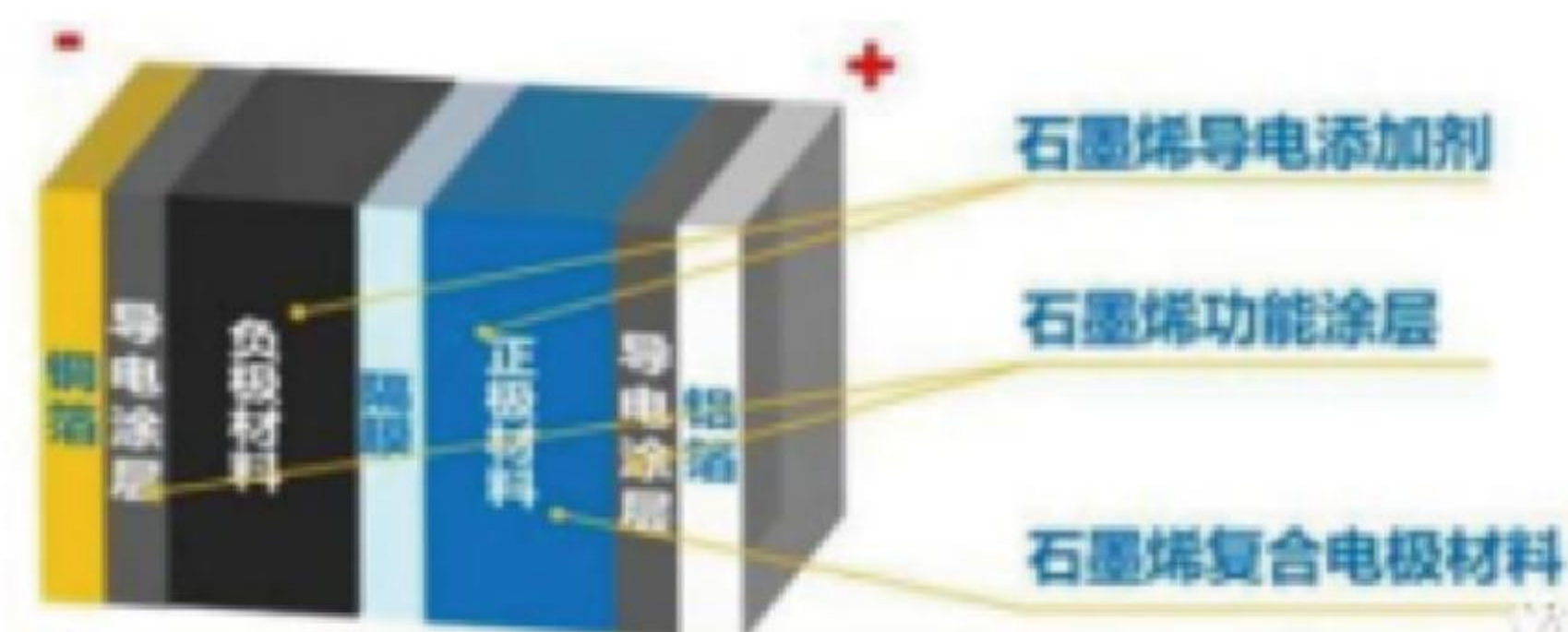


高性能石墨烯电池材料

High-performance Graphene Battery Materials

以气相合成法石墨烯开发的石墨烯导电浆料、石墨烯硅碳负极以及石墨烯富锂锰正极材料展现出优异的综合性能。

Graphene conductive paste, graphene silicon carbon negative electrode, and graphene rich lithium manganese positive electrode materials developed by gas-phase synthesis of graphene exhibit excellent comprehensive performance.



石墨烯硅碳负极

提高硅碳快充性能
提高材料抗压强度



石墨烯富锂锰正极

提高富锂锰比容量和循环寿命

石墨烯导电浆料

降低电池内阻

高性能石墨烯电池材料

High-performance Graphene Battery Materials

石墨烯导电浆料是一种高性能纳米材料分散体系，通过将气相合成法石墨烯与碳纳米管（CNT）进行精准复合，通过一维和二维人造碳材料复合形成协同增强的导电网络结构。

该浆料具有高导电性、高一致性、易加工等特点，极片电阻和导电性能突出。

Graphene conductive paste is a high-performance nano material dispersion system, which precisely composites graphene synthesized by gas-phase synthesis with carbon nanotubes (CNTs) to form a synergistic enhanced conductive network structure through one-dimensional and two-dimensional artificial carbon material composites.

This slurry has the characteristics of high conductivity, high consistency, and easy processing, with outstanding electrode resistance and conductivity.

石墨烯硅碳负极是第五代硅基负极材料，是一种革新性的锂离子电池负极材料，通过将高能量密度硅基材料与高稳定性碳基材料复合而成，其在气相合成法石墨烯的赋能下多孔碳粉末电阻率从 $3\Omega/\text{cm}$ 降至 $1\Omega/\text{cm}$ ，石墨烯硅碳负极快充性能从3C提高至6C，大大提高了电池倍率性能。

Graphene silicon carbon negative electrode is a fifth generation silicon-based negative electrode material, which is an innovative negative electrode material for lithium-ion batteries. It is composed of high-energy density silicon-based materials and highly stable carbon based materials. Under the empowerment of graphene by gas-phase synthesis, the resistivity of porous carbon powder is reduced from $3\Omega/\text{cm}$ to $1\Omega/\text{cm}$, and the fast charging performance of graphene silicon carbon negative electrode is improved from 3C to 6C, greatly improving the rate performance of the battery.

石墨烯富锂锰正极材料性能

1.高首周效率(>90%)与优异的循环寿命(100圈容量保持率>90%)，通过石墨烯改性策略增强富锂锰正极电子电导，抑制锰溶出，提升比容量和循环寿命。

2.常规倍率下放电比容量可超过280mAh/g。

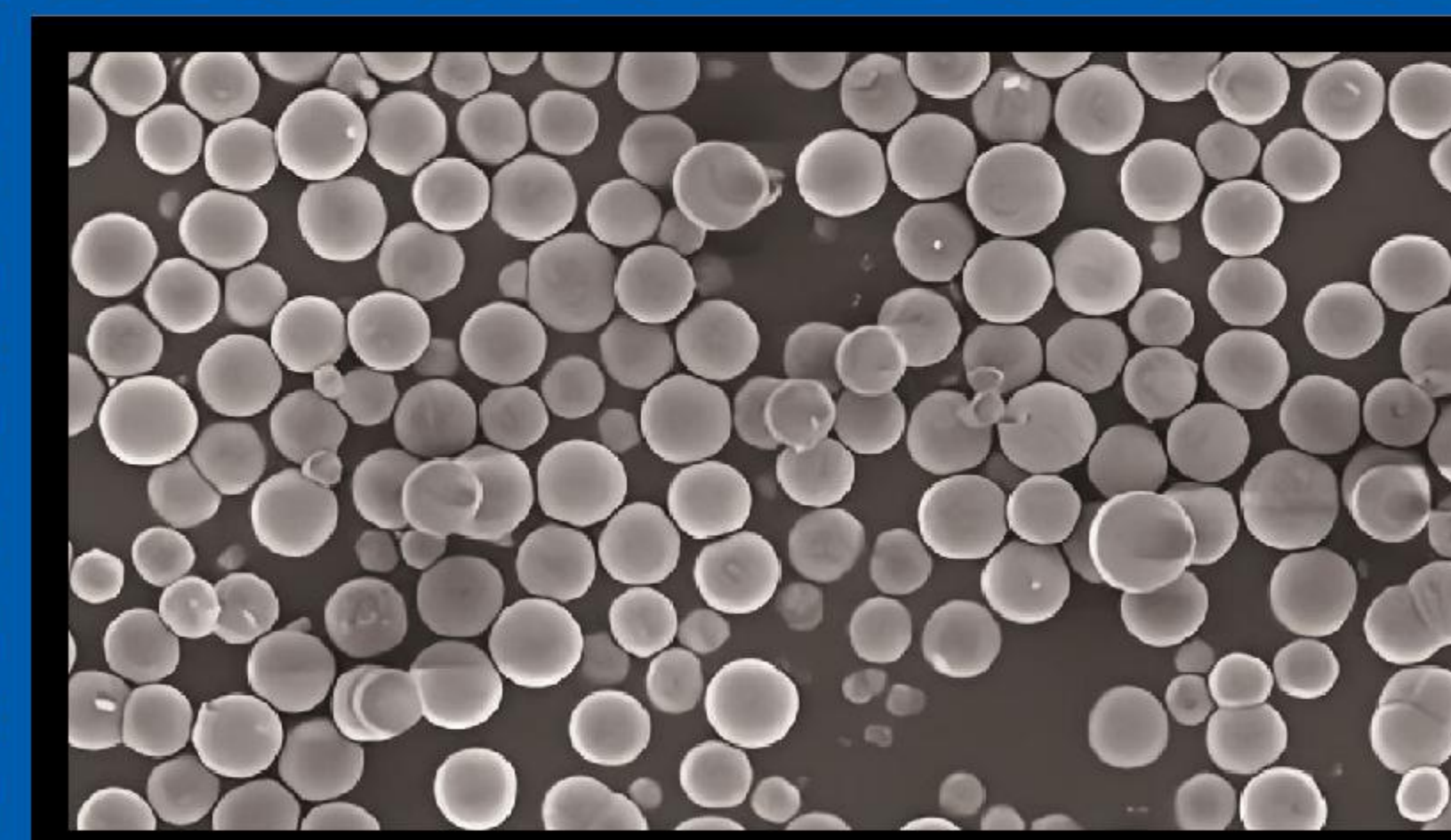
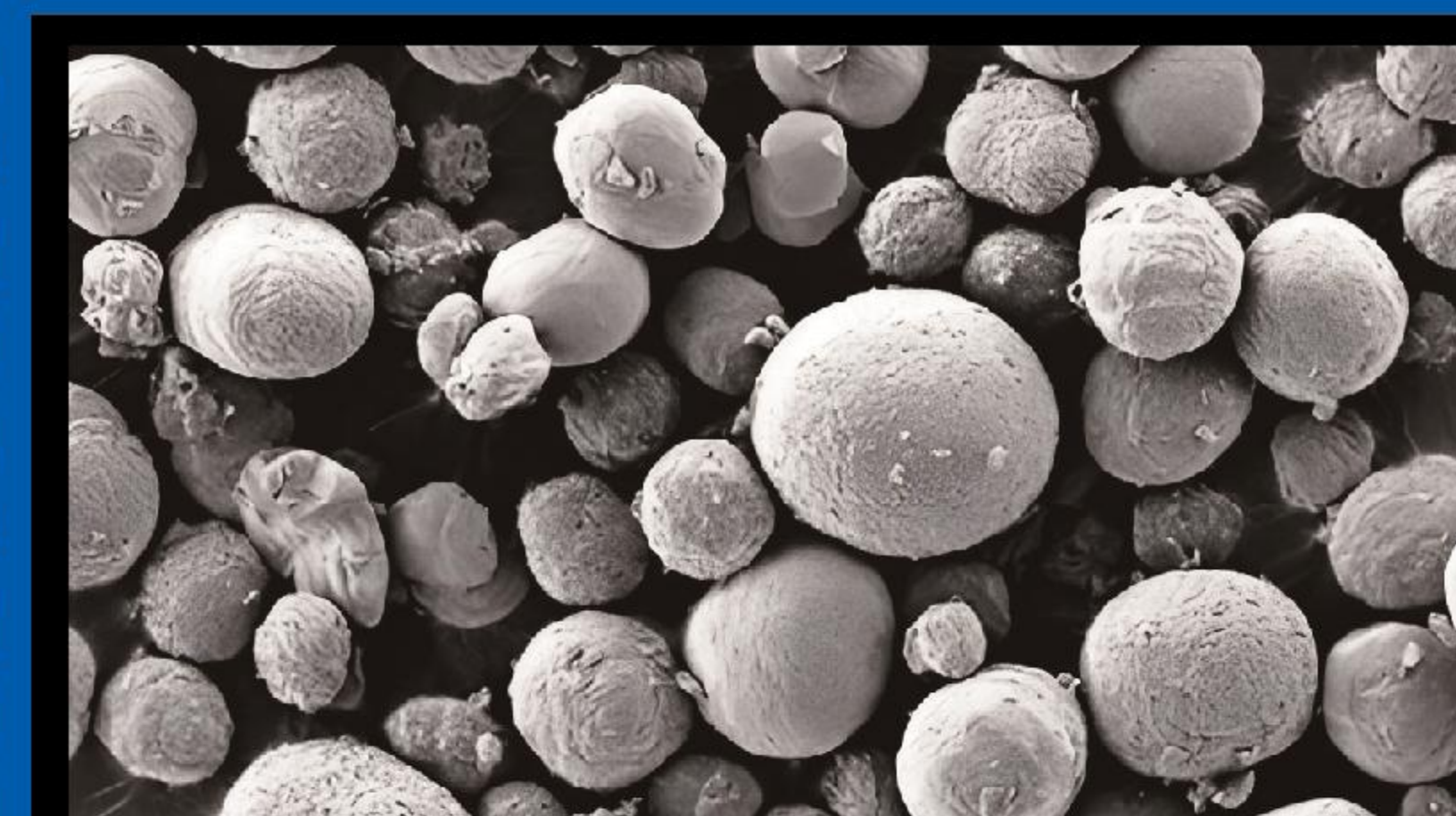
3.组装软包电池后能量密度高达500Wh/kg。

Performance Characteristics of Lithium-rich Manganese Composite Graphene Cathode Material:

High initial Coulombic efficiency (>90%) and superior cycle life (capacity retention >90% after 100 cycles) – achieved through a graphene modification strategy that enhances electronic conductivity in lithium-rich manganese-based cathodes, suppresses manganese dissolution, and improves specific capacity and cycling stability.

Discharge specific capacity exceeding 280 mAh/g at standard rates, demonstrating outstanding electrochemical performance.

Energy density of up to 500 Wh/kg when assembled into pouch cells, making it a high-energy-density solution for advanced battery applications.



石墨烯改性高分子材料

Graphene modified polymer materials

在酯化聚合阶段将石墨烯加入到高分子材料中,研发出高性能石墨烯改性母粒,提高产品附加值。如石墨烯改性PBT/PA6/-PA66/PET/POE/PLA/PBAT/PBS等功能母粒。

During the esterification and polymerization stage, graphene is added to polymer materials to develop high-performance graphene modified masterbatch, thereby increasing the added value of the product. Functional masterbatch such as graphene modified PBT/PA6/PA66/PET/POE/PLA/PBAT/PBS.

石墨烯改性PBT功能母粒:

以聚对苯二甲酸丁二醇酯 (PBT) 为基材,通过先进工艺将高纯度石墨烯均匀分散制备的高性能母粒。不仅能够提升力学性能,还能够改善PBT的热学和电学性能。

This high-performance masterbatch is produced by uniformly dispersing high-purity graphene into a polybutylene terephthalate (PBT) matrix using advanced processing technology.

It not only enhances the mechanical properties but also improves the thermal and electrical performance of PBT.

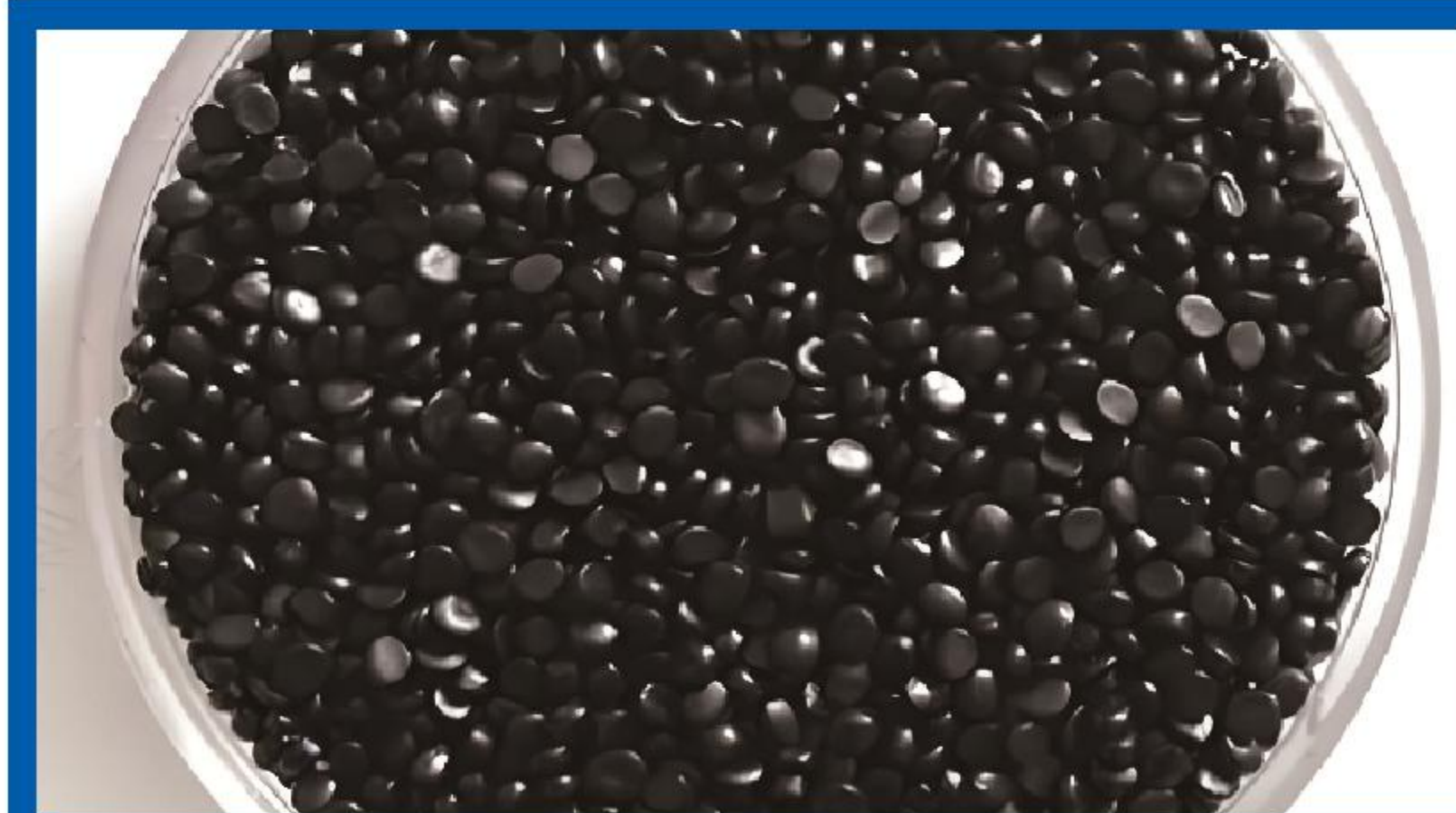


石墨烯改性PET功能母粒:

以聚对苯二甲酸乙二醇酯(PET)为基材,通过纳米分散技术将高纯度石墨烯均匀分散制备而成。不仅能够提升力学、热学和电学性能,还能提高PET的阻隔性能,满足高阻隔场景需求。

High purity graphene is uniformly dispersed and prepared using polyethylene terephthalate (PET) as the substrate through nano dispersion technology.

Not only can it improve the mechanical, thermal, and electrical properties, but it can also enhance the barrier performance of PET, meeting the requirements of high barrier scenarios.



石墨烯改性POE功能母粒:

以聚烯烃弹性体(POE)为基材,通过特殊工艺将高纯度石墨烯原位聚合制备的高性能材料。可以在保留材料透明的前提下大幅度提高POE强度和韧性,并且克服POE增强尼龙高温下的胶黏反应。

A high-performance material prepared by in-situ polymerization of high-purity graphene using polyolefin elastomer (POE) as the substrate through a special process. It can significantly improve the strength and toughness of POE while retaining the transparency of the material, and overcome the adhesive reaction of POE reinforced nylon at high temperatures.



05

产品领域
产品介绍

新电子领域石墨烯热管理材料

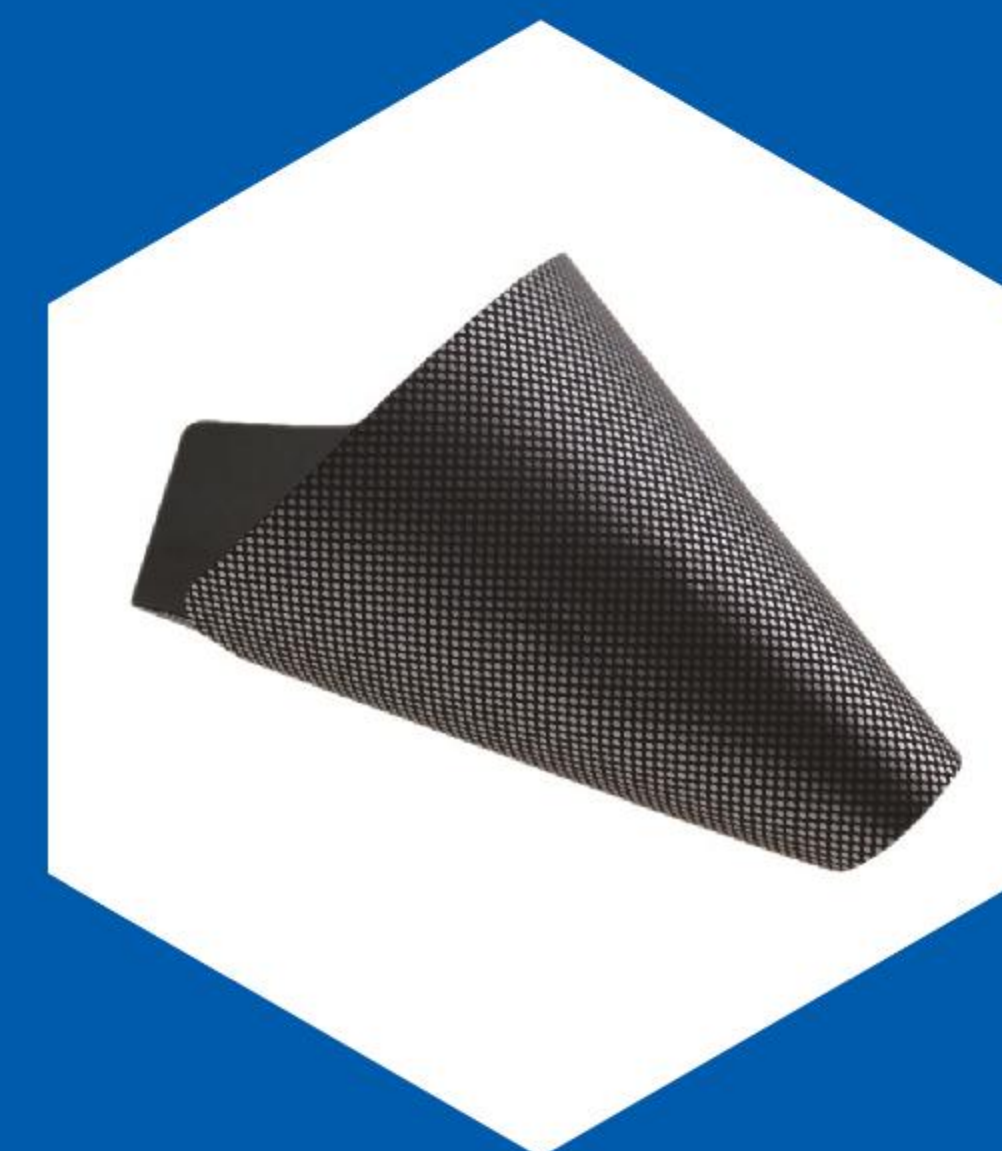
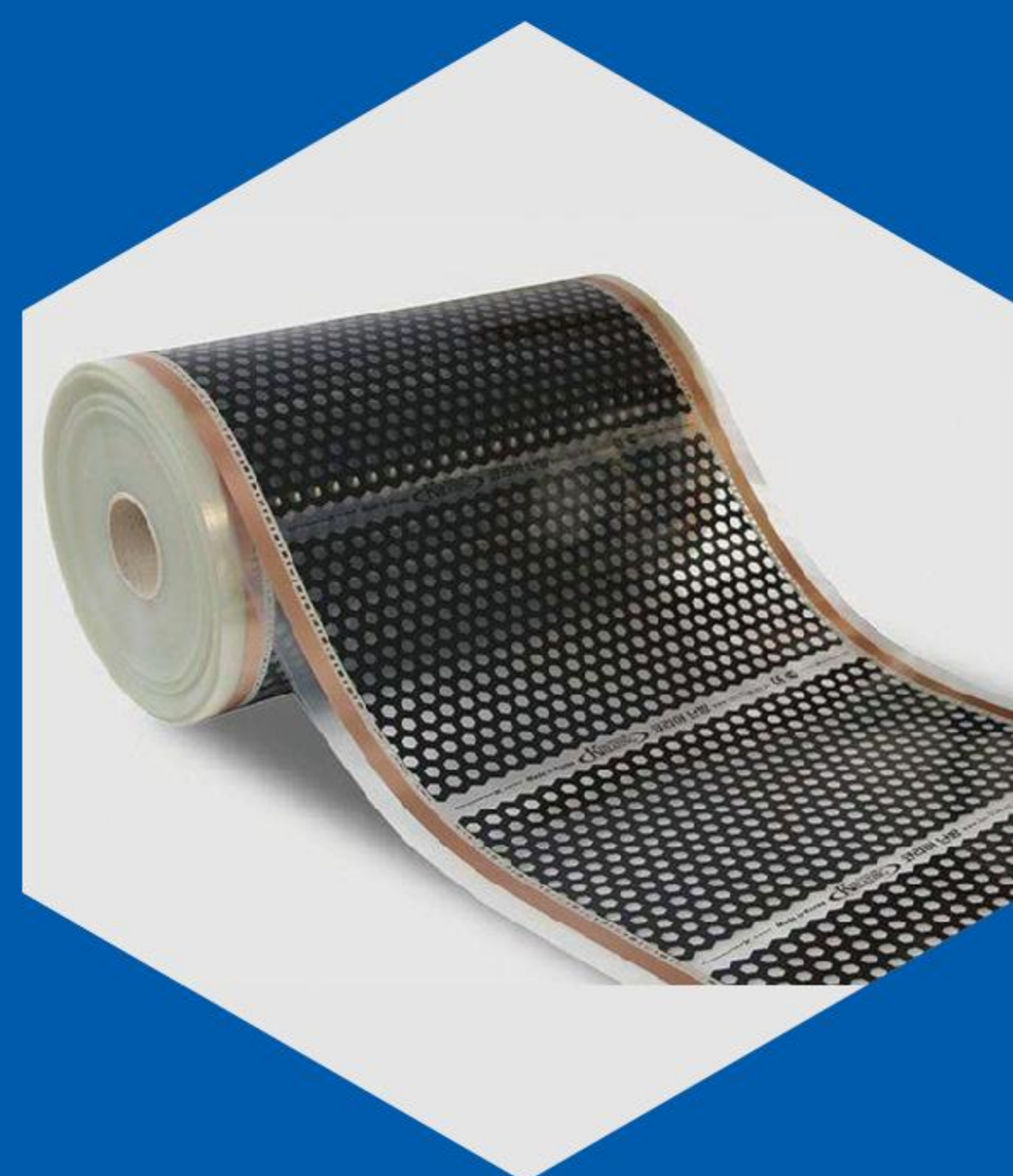
Graphene thermal management materials in the field of new electronics

1. 石墨烯发热片

Graphene heating element

一种基于石墨烯复合、改性技术制成的具有超高热导率以及快速加热、低功耗的高性能热管理材料。主要产品有：

A high-performance thermal management material based on graphene composite and modification technology, with ultra-high thermal conductivity, fast heating, and low power consumption. The main products are:



2. 石墨烯散热膜/基板

Graphene heat dissipation film/substrate

石墨烯膜

超薄VC

石墨烯散热膜



石墨烯基生物新材料

Graphene based biomaterials

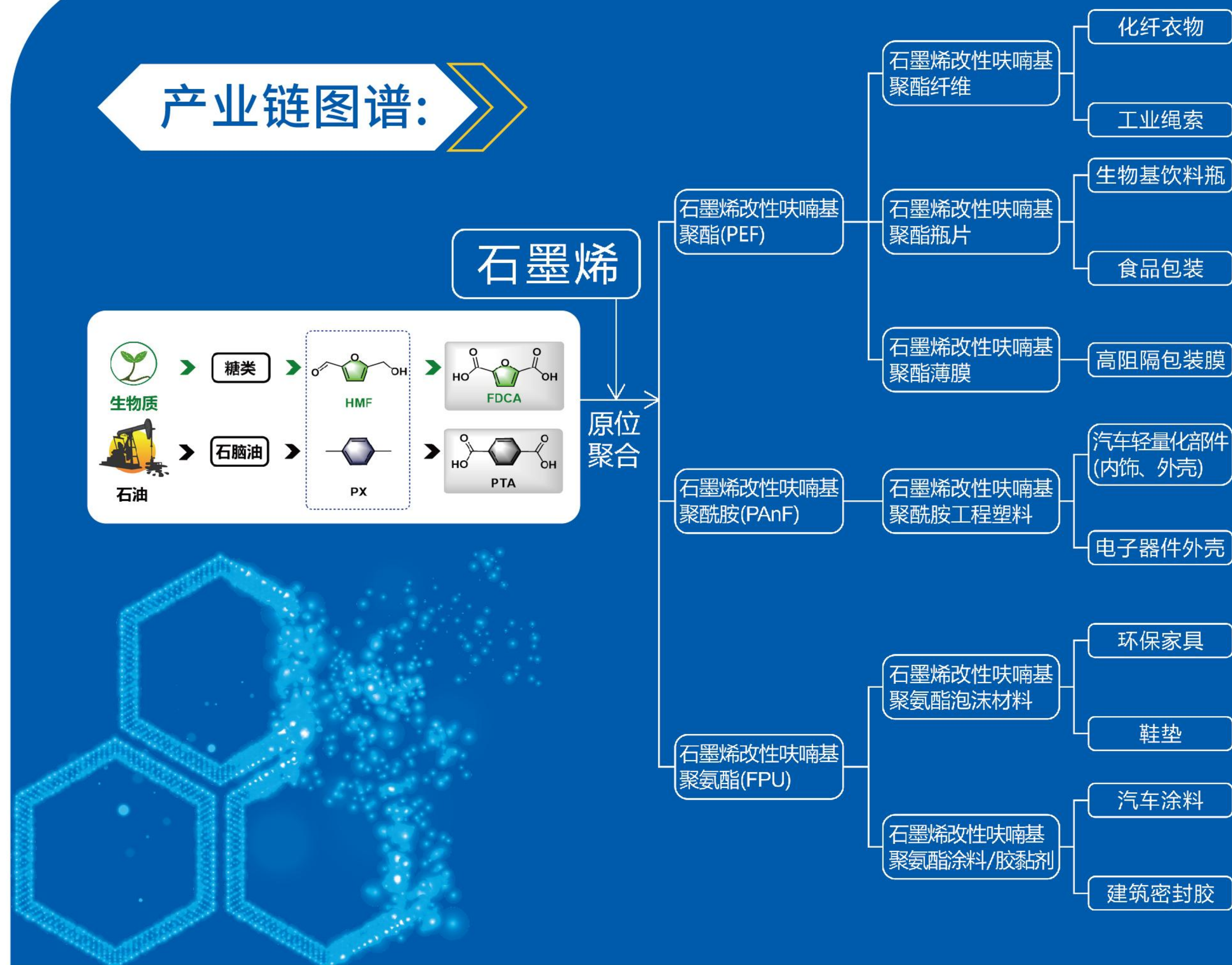
基于石墨烯改性的呋喃材料所生产的聚酯、聚酰胺、聚氨酯等呋喃基聚酯材料,在阻隔性能、热性能、力学性能、加工性能等方面较石油基苯环聚酯材料有天然优势。

石墨烯基生物高分子材料不仅是现有石油基高分子材料的绿色替代品,更是现有高分子材料体系的补充和突破,可解决我国高端材料所面临的“卡脖子”问题,引领材料领域的高端化和绿色化技术革命。

Polyester, polyamide, polyurethane and other furan based polyester materials produced based on graphene modified furan materials have natural advantages over petroleum based benzene ring polyester materials in terms of barrier properties, thermal properties, mechanical properties, processing properties, etc.

Graphene based biopolymer materials are not only a green alternative to existing petroleum based polymer materials, but also a supplement and breakthrough to the existing polymer material system. They can solve the bottleneck problem faced by high-end materials in China and lead the technological revolution of high-end and green materials.

产业链图谱:



打造石墨烯领域的 原创技术创新平台

中国化学东华安徽新材公司将以下游产业技术升级对石墨烯等高端材料的需求为导向，专注于石墨烯制备技术的持续升级迭代、性能优化及应用场景的拓展。

致力于开发一系列具有自主知识产权的关键核心技术，打造石墨烯领域的原创技术创新平台，开发出更多满足市场及客户需求的高性能新型产品。

Advanced Material (Anhui) Co., Ltd. will be guided by the demand for high-end materials such as graphene in the downstream industry technology upgrade, focusing on the continuous upgrading and iteration of graphene preparation technology, performance optimization, and expansion of application scenarios.

Committed to developing a series of key core technologies with independent intellectual property rights, creating an original technology innovation platform in the graphene field, and developing more high-performance new products that meet market and customer needs.

创新科技

Innovative Technology

引领未来

Leading the Future

中化学东华(安徽)新材料有限公司期待与各界合作伙伴携手并进,共同迎接石墨烯时代的光辉未来。

CNCEC ADVANCED MATERIALS(ANHUI)CO.,LTD.
looks forward to joining hands with partners from
all sectors to embrace the brilliant future of the
graphene era together.



中国化学

中化学东华(安徽)新材料有限公司

CNCEC ADVANCED MATERIALS (ANHUI) CO., LTD.



中国化学公众号



中国化学东华公司公众号



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