

HYPROOF
汉丞科技

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聚焦膜技术 成就中国智造
Membrane Technology Smart Manufacture

编号/No.:202306



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Membrane Technology Smart Manufacture



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集团简介 Profile

汉丞科技创立于2016年，公司以海归科学家为核心，以高科技为先导，主要致力于研发、生产、销售特种含氟新材料、增强型纳米微孔膜及复合材料等产品，为高新技术企业、专精特新企业，并荣获中国纺织工业协会科学技术二等奖。

汉丞科技总部在上海，下设五个子公司：汉丞新能源、汉纭新能源、汉单精细化工、汉圃新材料、汉珈环境科技，构建集研发、生产、销售与服务为一体的集团化发展企业。

汉丞科技以“科技创新”作为核心竞争力，公司在增强型纳米微孔膜材料技术方面有着多年的高新技术积累，在氟膜材料应用领域已开发生产出多款材料并应用行业，有着丰富的产品设计开发及产业化经验。目前公司拥有各项发明专利、实用新型专利近40项，其中发明专利授权近30项（国外发明专利8项）。形成以自主原创核心技术、核心产品及系统解决方案为一体的完整产品及服务体系。

汉丞科技根据产品应用领域划分四大业务版块：新能源应用、工业应用、功能性纺织品、农业环保。

“聚焦膜技术，成就中国智造”，诠释了汉丞人积极进取、锐意创新、科技报国的企业精神。全体汉丞人将秉持“科技强国，新材料为美丽中国保驾护航”的决心，争做新材料行业领导者！

Hyproof Tech. was founded in 2016. Focus on innovated science and advanced technology, Hyproof Tech. is committed to research, development, production and sales of novel fluorinated materials, reinforced nano-microporous membranes and composite products. It is a high-tech enterprise, which is recognized as "refined innovative enterprise" by government, and won the second prize of Science and Technology Award of China Textile Industry Association.

Headquartered in Shanghai, Hyproof Tech. has five subsidiaries: Hyproof New Energy, Hypem New Energy, Handan Fine Chemicals, Hyproof New Materials, and Hyfertile Environmental Technology, a collection of R&D, production, sales and service enterprises.

Hyproof Tech. takes "scientific and technological innovation" as its core competitiveness, with scientists of many years of experience in the technology of reinforced nano-microporous membrane materials, product design, development and commercialization. The company has about 40 invention patents and utility patents, including nearly 30 invention patents (8 foreign invention patents).

Hyproof Tech. has four business division according to product application fields: Renewable energy, industrial, functional textile and agricultural environmental protection.

"Membrane Technology, Smart Manufacture", perfectly shows the entrepreneurial spirit of Hyproof people's aggressiveness, innovation in science and technology to serve the world. All Hyproof people will uphold the determination of "powering better Earth with science and technology, and escorting a beautiful environment with new materials", striving to be the leader in the new material industry!



集团大事记 Memorial Events

2017年

第二届中国军民两用技术创新应用大赛优胜奖

The winner of the Second China Military-civilian Dual Technology Innovation and Application Competition

2018年

获邀参加第四届军民融合应用成果展，受到国家领导人好评

It was invited to participate in the fourth Military-civilian Integration Application Achievements Exhibition and was well received by national leaders

2019年

国家重大专项：车用燃料电池膜电极及批量制备技术

National major projects: vehicle fuel cell membrane electrode and batch preparation technology

2020年

可消毒循环使用KN95防护口罩滤芯量产被征用，助力上海抗疫

The mass production of KN 95 protective mask filters was requisitioned to help Shanghai fight the epidemic

2021年

中国纺织工业联合会科学技术奖科技进步二等奖

Second prize of Science and Technology Progress Award of China National Textile Industry Federation Science and Technology Award

2022年

国家重大专项：电解水制高压氢电解堆及系统关键技术

National major projects: water electrolysis to make high voltage hydrogen electrolytic reactor and key technologies of the system

被评为上海市“专精特新”企业

It was rated as a "special and innovative enterprise" in Shanghai



资质荣誉及专利

Qualification, Honor and Patent



汉丞科技核心专利多达40余项
Hyproof Tech.Has Over 40 Core Patents



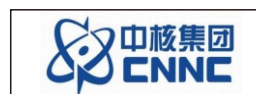
战略合作伙伴 Strategic Partner



捷氢科技



氢晨科技



核工业八所



上汽集团



清能股份



神力科技



鸿基创能



德林社集团



西安特变



邦维新材



探路者



东丽



福华世家



杜邦



际华集团



新源动力



国家电投



安踏



合润生物



唐锋能源

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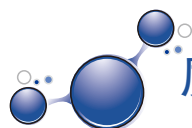
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全氟磺酸树脂及分散液产品

Perfluorosulfonic Acid Resin and Dispersion Products

全氟磺酸树脂是含氟高分子材料中的一种特殊聚合物，具有超常稳定性和耐化学介质性能。
Perfluorosulfonate resin is a special polymer containing fluorine polymer materials, with extraordinary stability and chemical medium resistance.

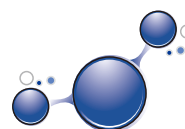


质子交换膜 (PEM) 产品

Proton Exchange Membrane (PEM)

具有化学稳定性好、热稳定好、质子传导率高、机械强度高优点，可在强酸、强碱、强氧化剂介质和高温等苛刻条件下应用。涵盖燃料电池、水电解、液流电池以及其它多个应用领域，可为客户定制个性化解决方案。

It has the advantages of good chemical stability, good thermal stability, high proton conductivity and high mechanical strength, and can be applied under harsh conditions such as strong acid, strong alkali, strong oxidant medium and high temperature. Covering fuel cells, hydrolysis, flow batteries and other applications, you can customize personalized solutions for customers.

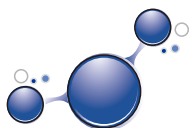


功能性纺织品

Functional Textile

具有防水度高、透气性高、透湿性高、强度高、阻燃性高、防菌防病毒、抗紫外线、耐老化等诸多优点，广泛应用于安全防护领域。

High moisture permeability, high strength, high resistance to flame retardants, protection against bacteria and viruses, UV resistance, aging resistance, and is widely used in the security protection field.

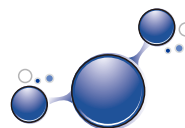


堆肥功能膜产品

Compost Functional Membrane

可将畜禽粪污、市政污泥、餐厨垃圾、园林垃圾、有机废弃物转化为有机肥，实现资源可循环再利用，生态环境的可持续平衡发展。

It can transform the livestock and poultry manure, municipal sludge, kitchen waste, garden waste and organic waste into organic fertilizer, and realize the recycling of resources and the sustainable and balanced development of ecological environment.



工业应用产品

Industrial Application

具有孔径分布均匀、孔隙率高、过滤精度高及力学强度高特点，主要用于生物制药、医疗、微电子半导体、汽车及水处理等领域。

It features a uniform pore size distribution, high porosity, high filtration accuracy and great mechanical strength, and is mainly used in the biopharmaceutical, medical, microelectronic semiconductor, automotive and water treatment sectors.



全氟磺酸树脂 Perfluorosulfonic Acid Resin



产品说明

Product Description

全氟磺酸树脂是含氟高分子材料中的一种特殊聚合物，具有超常稳定性和耐化学介质性能。广泛应用于全氟磺酸质子膜燃料电池、氯碱工业、锂离子二次电池、其它电解装置、污水处理、化学催化、光催化、气体分离、功能复合材料特别是机器人用电活性聚合物等领域。

Perfluorosulfonic acid resin is a special fluorine-containing polymer with extraordinary stability and chemical resistance. It is widely used in perfluorosulfonic acid proton membrane fuel cells, chlor-alkali industry, lithium-ion secondary batteries, other electrolysis devices, sewage treatment, chemical catalysis, photocatalysis, gas separation, functional composite materials, especially electroactive polymers for robots.

主要用途

Application

用于制备各种电解装置中所需离子交换导电膜、燃料电池离子膜，用作有机合成中使用的超强酸催化剂、超稳定性离子交换剂等。

It is used to prepare ion exchange conductive membranes and fuel cell ion membranes required in various electrolysis units, it is used as a super-acid catalyst and super-stable ion exchanger used in organic synthesis.



全氟磺酸树脂分散液

Perfluorosulfonic Acid Resin Dispenser



产品说明

Product description

- 拥有自主知识产权的全氟磺酸树脂及其分散液。
- 相关产品已经广泛应用于CCM膜电极浆料制作、质子交换膜生产、特种电化学粘结剂等多个领域。
- 支持为客户提供客制化的产品，客户可以选择不同的分散体系、固含量以及离子交换当量，实现最优的应用路线，满足下游客户的使用需求。
- Hyproof has an independent system of perfluorosulfonic acid resin dispersion methods that can efficiently produce the corresponding resin dispersions.
- Hyproof's related products are widely used in CCM production, PEM production, specialty electrochemical binders and other fields.
- Hyproof fully supports customization. Customers can choose different dispersion systems, solid content and ion exchange equivalents to achieve the optimal selection to meet the needs of customers.

产品规格

Series product

产品型号 Product model	产品规格 Product parameter	应用场景 Application scenarios
HCD-1905	5%固含量 5% Solid content	催化层浆料配方、粘结剂 Catalytic layer slurry formula, binder
HCD-1820	20%固含量 20% Solid content	质子交换膜 Proton exchange membrane



e-PTFE膜 e-PTFE Membrane



产品优势

Product superiority

ePTFE膜具有高度化学稳定性、耐高低温、耐腐蚀、耐气候、高润滑、良好的不粘附性、电绝缘性、生物相容性佳等优良特性, 是一种非常优秀的防水、防尘、透气材料。

The ePTFE membrane has high chemical stability, high and low temperature resistance, corrosion resistance, weather resistance, high lubrication, good non-adhesion, electrical insulation, good biocompatibility and other excellent characteristics, is a very excellent waterproof, dustproof and breathable material.

产品说明

Product description

ePTFE膜是一种新型氟膜, 性能卓越, 应用领域广泛。该材料具有微米或亚微米级的多孔立体网状微观结构, 由PTFE树脂经拉伸、车削等特殊加工方法制成, 在保持了PTFE优良化学性能的同时, 通过改变材料的结构、形态、厚度、表面几何形状, 然后搭配不同特性的辅助材料, 从而实现不同的功能和用途。

The ePTFE membrane is a new type of fluorine membrane with excellent performance and a wide range of applications. The material has a micron or sub-micron porous three-dimensional network microstructure, made of PTFE resin by stretching, turning and other special processing methods, while maintaining the excellent chemical properties of PTFE, by changing the structure, morphology, thickness, surface geometry of the material, and then with auxiliary materials with different characteristics, so as to achieve different functions and uses.





增强型全氟磺酸质子交换膜

Reinforced Perfluorosulfonate Proton Exchange Membrane

产品说明

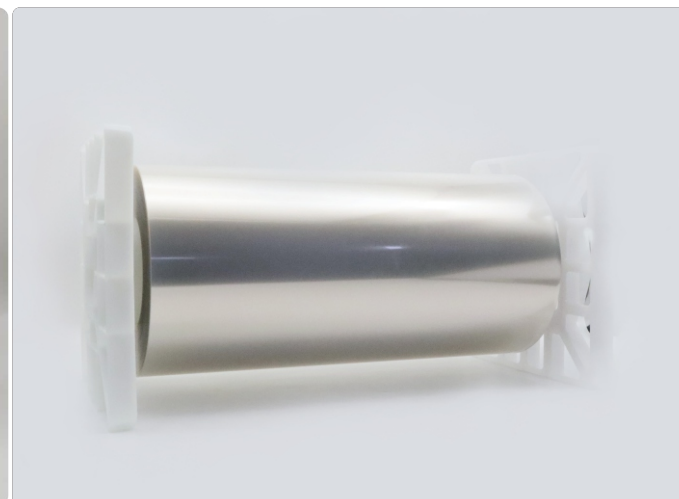
Product description

全氟磺酸质子交换膜是一种固体聚合物电解质，具有优良的耐热性能、力学性能、电化学性能以及化学稳定性能，可在强酸、强碱、强氧化剂介质等苛刻条件下使用。

广泛应用于PEM制氢、燃料电池、液流电池以及其它多个应用领域，可为客户定制个性化解决方案。

Perfluorosulfonic acid proton exchange membrane is a solid polyelectrolyte with excellent heat resistance, mechanical properties, electrochemical properties and chemical stability, which can be used under harsh conditions such as strong acid, strong alkali and strong oxidant medium.

Widely used in PEM hydrogen production, fuel cells, flow batteries and many other applications, can be customized for customers to customize personalized solutions.





核心优势-全国产化 Core Advantage-Full Localization

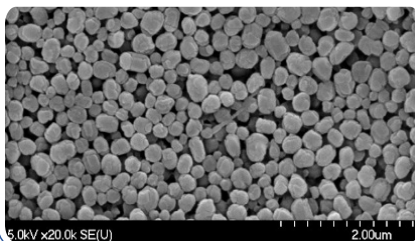
核心原材料至最终成膜全链路国产化的企业

Proton Exchange Membrane Raw Materials, Technology, Core Products Fully Localization

超高分子量聚四氟乙烯 Ultra-high Molecular Weight PTFE

- $-\text{CF}_2\text{CF}_2-$ 纯度>99.9999%
- 分子量~1亿
- 耐高低温度: $-200\sim 400^\circ\text{C}$
- 产能: 600吨

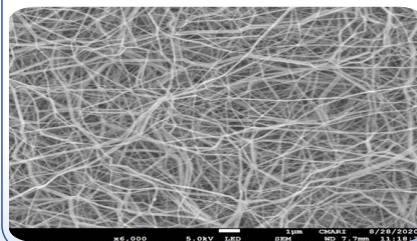
- $-\text{CF}_2\text{CF}_2-$ Fineness > 99.9999%
- Formula Weight ~ 1 hundred million
- High and low temperature resistance: $-200\sim 400^\circ\text{C}$
- Capacity: 600 Tons



超薄高强纳米纤维微孔氟膜 Ultrathin and High-strength Nanofiber Microporous ePTFE Membrane

- 超高强度 >60MPa
- 成功国产: 1000万平米产能
- 国家纺织工业技术鉴定
- 性能达国际先进水平
- 超越国外膜规格

- Ultra-high Strength > 60 MPa
- Successful domestic production: 10 million square meters of production capacity
- National textile industry technology appraisal
- The performance reaches the international advanced level
- Beyond state-of-art membrane specifications



含氟质子交换树脂 Fluo Proton Exchange Resin

- 成功国产: 产业化规模
- 高质子传导率
- 纳米材料

- Successful domestic production: industrial scale
- High proton conductivity
- Nanomaterials



超薄增强含氟质子交换膜 Ultrathin Reinforced Fluorine-containing Proton Exchange Membrane

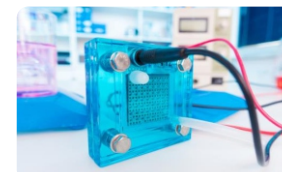
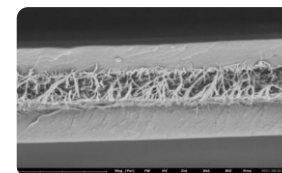
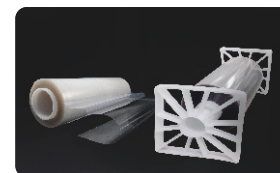
- 成功国产: 180万平米产能
- 运行6年: 设备产品稳定

- Successful domestic production: 1.8 million square meters of production capacity
- 6 years of operation: stable equipment products



新能源应用

Renewable Energy Application



新能源应用：质子交换膜 双碳业务布局

Renewable Energy Application: Proton Exchange Membrane Dual Carbon Business Layout

业务实现“一体四翼”的格局，已布局四个主体产业应用场景：

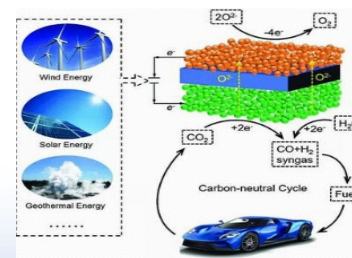
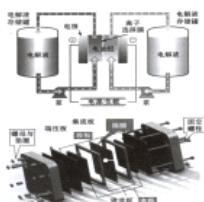
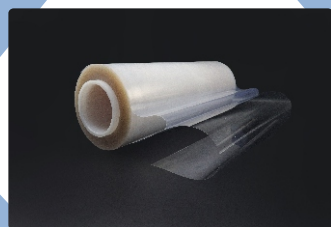
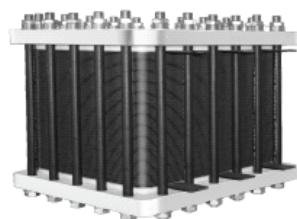
一体：质子交换膜（超薄增强型）

四翼：电解水（制氢）、燃料电池（用氢）、液流电池（储能）、二氧化碳浓缩电解还原（减碳）

The business realizes the pattern of "One Core Product and Four Business Applications", and has laid out four main industrial application scenarios:

One Core Product: Proton exchange membrane (ultra-thin reinforced)

Four Business Applications: electrolysis of water (hydrogen production), fuel cell (hydrogen application), flow battery (power storage), carbon dioxide concentrated electrolytic reduction (carbon reduction)





应用--PEM制氢槽 Application/PEM Electrolyzer Production Tank

产品说明

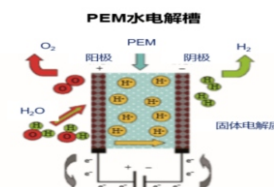
Product description

- 针对目前PEM制氢膜的成本过高和均质膜溶胀率过大痛点，汉丞科技首创超薄增强PEM膜百米卷材，创新解决方案。
- 降低了膜的厚度及成本，提高了膜的质子传导率、强度及抗热水溶胀率，保证了PEM在使用时的尺寸稳定性及长寿命。
- In view of the current high cost of PEM hydrogen production membrane and the pain point of excessive swelling rate of homogenized membrane, Hyproof Technology pioneered ultra-thin reinforced PEM membrane 100-meter coil and innovated solutions.
- It reduces the thickness and cost of the membrane, improves the proton conductivity, strength and hot water swelling resistance of the membrane, and can ensure the dimensional stability and long life of PEM in applications.

产品规格

Series product

产品型号 Product model	产品厚度 Product thickness	增强层 Enhanced sense	推荐应用领域 Recommended application fields
HPM-2055	55μm	✓	小型电解槽、医疗健康 Small-scale electrolysis tank, medical health
HPM-2080	80μm	✓	分布式发电、大型电解槽 Distributed power generation, large-scale electrolytic cell





应用一燃料电池

Application/Fuel Cell

产品说明

Product description

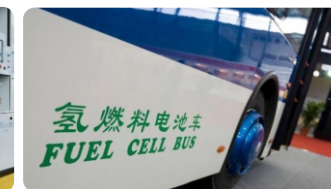
- 针对目前燃料电池市场不同需求，依托公司核心材料ePTFE高强膜材，开发了多种具有自主知识产权的增强型全氟磺酸质子交换膜。
- 为不同的场景提供了多种解决方案，可以灵活适配不同的终端应用。
- 原材料和生产设备的全面国产化为我们的产品提供了更灵活的供应链关系和更有效的成本控制。

- In response to the different needs of the current fuel cell market, relying on the company's core material ePTFE high-strength membrane, a variety of reinforced perfluorosulfonic acid proton exchange membranes with independent intellectual property rights have been developed.
- It provides a variety of solutions for different scenarios and can flexibly adapt to different terminal applications.
- The comprehensive localization of raw materials and production equipment provides our products with more flexible supply chain relationships and more effective cost control.

产品规格

Series product

产品型号 Product model	产品厚度 Product thickness	增强层 Enhanced sense	推荐应用领域 Recommended application fields
HPM-1815	15μm	✓	分布式发电、商用车 Distributed power generation, commercial vehicles
HPM-1812	12μm	✓	分布式发电、商用车 Distributed power generation, commercial vehicles
HPM-1809	9μm	✓	分布式发电、乘/商用车 Distributed power generation, passenger/commercial vehicles
HPM-1806（开发中） Development	6μm	✓	乘/商用车 passenger/commercial vehicles





应用—液流电池

Application/Liquid Flow Battery

产品说明

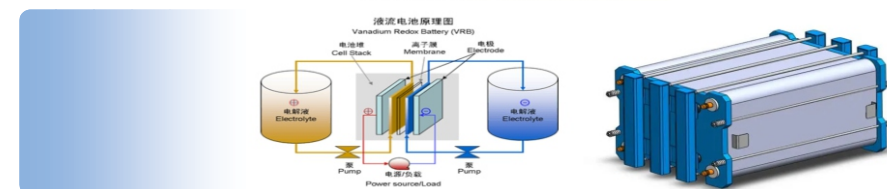
Product description

- 全钒液流电池作为新型储能方式，近年来受到国家政策的大力支持。
 - 为液流电池提供了成熟的解决方案。
 - 拥有高质子传导率、长寿命、低形变、低钒离子渗透等优异的特性。
-
- As a new energy storage method, all-vanadium redox flow batteries have been strongly supported by national policies in recent years.
 - Provide a proven solution for flow batteries.
 - It has excellent characteristics such as high proton conductivity, long lifetime, low deformation, and low vanadium ion permeation.

产品规格

Series product

产品型号 Product model	产品厚度 Product thickness	增强层 Enhanced sense	推荐应用领域 Recommended application fields
HPM-2035	35μm	✓	全钒液流电池 All-vanadium flow battery
HPM-2025	25μm	✓	全钒液流电池 All-vanadium flow battery



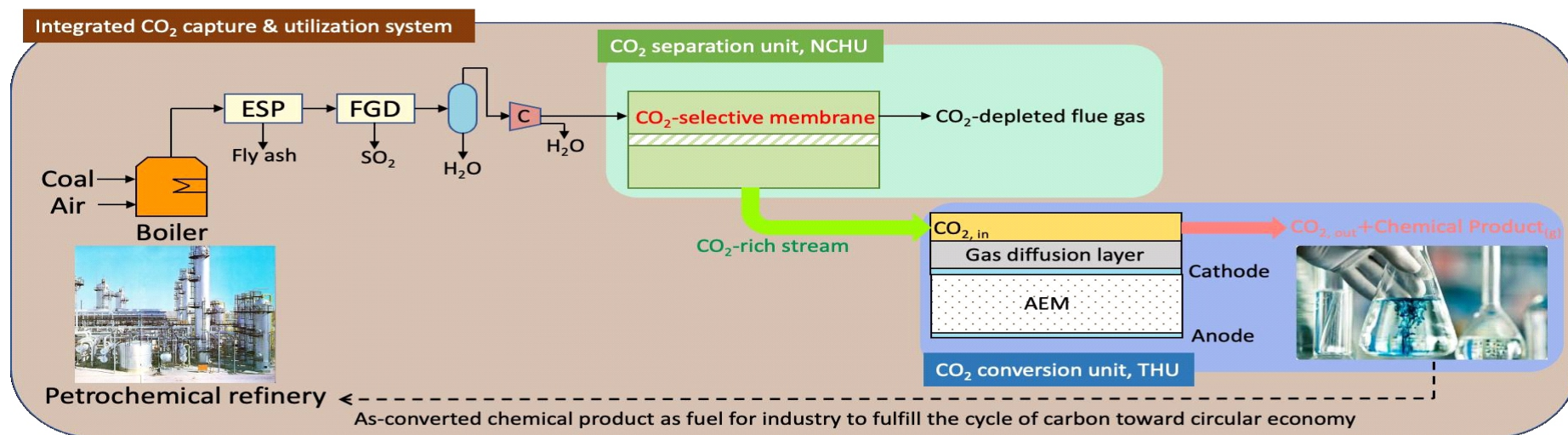


二氧化碳膜法浓缩提纯 / 膜电解还原成高附加值产物（直接减碳）

Concentration and Purification Through CO₂ Membrane Method /
Membrane Electrolysis for Reduction into High Value-added Products (Direct Carbon Reduction)

CO₂浓度的增加对环境造成了显著的负面影响，使地面吸收的太阳光的热量不易散失，导致全球变暖，进而引起两极冰川融化、海平面上升等。有研究表明，目前的CO₂浓度即使不增加，靠地球的自身消化能力，也要近1000年才能消除从前所累计的温室效应的影响。汉丞科技新能源针对CO₂还原的需求和痛点，依托公司核心优势，提出了解决方案。

The increase in CO₂ concentration has a significant negative impact on the environment, making the heat absorbed by the ground dissipated slower, leading to global warming, which in turn causes the melting of polar glaciers and sea level rise. In view of the needs and pain points of CO₂ reduction, Hyproof Technology Renewable Energy proposes cost effective solutions based on the company's core competence.





汉丞膜 快速降本的可行路径 Feasible Path for Hyproof Membrane to Rapidly Reduce Costs

自主创新硬科技 实现全国产化 打破垄断 大幅降本：

- 从全氟磺酸树脂、ePTFE膜到质子交换膜，汉丞科技突破国外专利限制，通过自立自强开发创新工艺，实现了原料、设备全国产化，供应链和成本控制更灵活。
- 超薄增强质子交换膜可干法制作电解水膜电极及封装电解槽，更有利于增强使用寿命，降低使用成本，提高下游效率。汉丞科技质子交换膜性价比高，成本较进口竞品下降 > 60%。

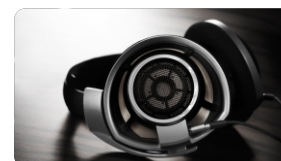
Independent innovation of hard technology to achieve national production, break monopoly, and greatly reduce costs:

- From perfluorosulfonic acid resin, ePTFE membrane, to proton exchange membrane, Hyproof Technology has broken through foreign patent restrictions and achieved national localization of raw materials and equipment through independent research and innovation processes, making supply chain and cost control more flexible.
- The ultra-thin reinforced proton exchange membrane can be produced by dry method for the electrode of water electrolysis film and the encapsulation of electrolysis cell, which is more conducive to reinforcing service life, reducing operating costs, and improving downstream efficiency. Hyproof Technology proton exchange membrane has high cost-effectiveness, and the cost has decreased by more than 60% compared to imported competitors.



工业应用

Industrial Application





产品类别--PTFE过滤膜 Product Category--PTFE Filter Membrane

产品规格及性能

Product specifications and performance

产品类型 Product type	疏水膜 Hydrophobic membrane	亲水膜 Hydrophilic membrane	亲水/疏水复合膜 Hydrophilic/Hydrophobic composite membrane	疏水疏油复合膜 Hydrophobic and oleophobic composite membrane
产品性能 Product performance				
厚度, μm Thickness, μm	5-100	5-50	依支撑材料定制 Customized according to support material	依支撑材料定制 Customized according to support material
过滤精度, μm Filtration accuracy, μm	0.05-5.0	0.03-5.0	0.03-5.0	0.03-5.0
支撑材料 Support material	/	/	PET, PP, PET/PE, PP/PE	PET, PP, PET/PE, PP/PE
复合方式 Composite mode	/	/	热复合/胶复合 Thermal compounding / glue compounding	热复合/胶复合 Thermal compounding / glue compounding
气体流量 $\text{mm/s}@300\text{Pa}$ Gas flow $\text{mm/s}@300\text{Pa}$	1-100	/	1-100 (疏水复合膜) 1-100 (Hydrophobic composite membrane)	1-80
液体流量 $\text{ml/cm}^2/\text{min}@20\text{KPa}$ Liquid flow rate in $\text{ml/cm}^2/\text{min}@20\text{KPa}$	/	1-100	1-80 (亲水复合膜) 1-80 (Hydrophilic composite membrane)	/
疏油等级 Oleophobic grade	/	/	/	3-8



产品应用

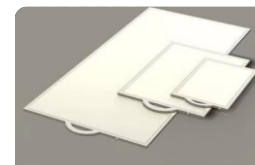
Product application

微电子半导体、实验室分析、生物医药、医疗器械、MBR、膜蒸馏等领域。

Microelectronic semiconductors, laboratory analysis, biomedicine, medical devices, MBR, membrane distillation and other fields.



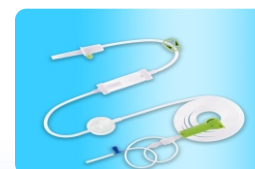
折叠滤芯
Fold the filter element



MBR



针式过滤器
Syringe filter



精密输液器
Precision infusion set



产品类别--防水透气膜

Product Category-
Waterproof and Air-Permeable Membrane

产品规格及性能

Product specifications and performance

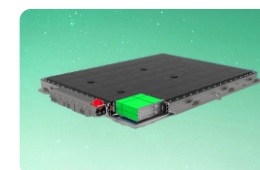
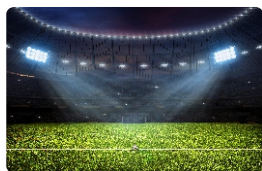
产品性能 Product performance	产品类型 Product type	疏水膜 Hydrophobic membrane	疏水复合膜 Hydrophilic composite membrane	疏水疏油膜 Hydrophobic and oleophobic membrane	疏水疏油复合膜 Hydrophobic and oleophobic composite membrane
厚度, μm Thickness, μm		5-100	依支撑材料定制 Customized according to support material	5-50	依支撑材料定制 Customized according to support material
过滤精度, μm Filtration accuracy, μm		依需求定制 Customized according to needs			
支撑材料 Support material		/	PET, PP, PET/PE, PP/PE	/	PET, PP, PET/PE, PP/PE
复合方式 Composite mode		/	热复合/胶复合 Thermal compounding / glue compounding	/	热复合/胶复合 Thermal compounding / glue compounding
透气量 $\text{ml}/\text{cm}^2/\text{min}@7\text{KPa}$ Breathable amount $\text{ml}/\text{cm}^2/\text{min}@7\text{KPa}$		100-15000	100-12000	100-12000	100-10000
疏油等级 Oleophobic grade		/	/	3-8	3-8

产品应用

Product application

汽车、包装、储能、户外照明、手持式电子设备等领域。

Automotive, packaging, energy storage, outdoor lighting, handheld electronic devices and other fields.

防水透气阀
Waterproof vent电池防爆阀
Battery explosion-proof valve户外照明
Outdoor lighting包装
Packaging手持式电子产品
Handheld electronics储能
Energy storage



产品类别一防水透声膜

Product Category-
Waterproof Sound Membrane

产品规格及性能

Product specifications and performance

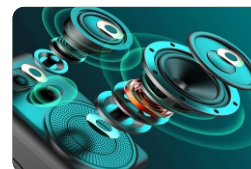
产品类型 Product type	防水透声膜 Waterproof and sound permeable membrane	防水透声复合膜 Waterproof and sound-transparent composite membrane
产品性能 Product performance		
厚度, μm Thickness, μm	3-15	依支撑材料定制 Customized according to support material
防护等级 Degree of protection	IP65-IP68	
支撑材料 Support material	/	PET, PP, PET/PE, PP/PE
复合方式 Composite mode	/	热复合 Thermal compounding
透气量 $\text{ml}/\text{cm}^2/\text{min}@7\text{KPa}$ Breathable amount $\text{ml}/\text{cm}^2/\text{min}@7\text{KPa}$	≥ 12000	≥ 3000
疏油等级 Oleophobic grade	3-8	
声损 Sound artifacts	1-5dB	
耐水压 KPa Resistant to water pressure KPa	10-300	10-500

产品应用

Product application

麦克风、扬声器、耳机、手机等电子设备领域。

Microphones, speakers, headphones, mobile phones and other electronic devices.

扬声器
Speakers麦克风
Microphones耳机
Earphones手机
Mobile phone



产品类别--密封产品

Product Category--Sealing Products

产品说明

Product description

- 采用膨体拉伸工艺制备，不含填料，具备优异的耐化学性；
- 优异的耐蠕变性和螺栓荷载的保持能力；
- 优异的可压缩性和变形能力，适用于平整度不佳或损伤的法兰表面；
- 材质柔韧强度高，密封时所需紧固力小，可裁切或冲切成形状复杂或尺寸要求高的垫片；
- 优异的耐高低温性能，可耐受高空寒冷的温度环境；
- 根据要求，可赋予其耐环境、耐燃油等特性。
- Prepared by expansion stretching process, no filler, with excellent chemical resistance;
- Excellent creep resistance and bolt load retention ability;
- Excellent compressibility and deformation ability; suitable for flange surface with poor flatness or damage;
- The material is flexible and strong, the fastening force required during sealing is small, and it can be cut or punched into gaskets with complex shapes or high size requirements;
- Excellent high and low temperature resistance, can withstand high altitude cold temperature environment;
- According to requirements, it can be given environmental resistance, fuel resistance and other characteristics.



产品应用

Product application

航空密封和表面保护，工业应用等领域。

Aerospace sealing and surface protection, industrial applications and other fields.



航空密封
Aviation seals



工业应用
Industrial applications



产品类别--其它

Product Category-The Other Membrane

增湿器膜 Humidifier Membrane

产品性能

Product performance

高效增湿：快速将水分传递到空气中，提高空气湿度。

耐久性：经受住长时间的使用和反复清洗。

抗菌性：有效防止细菌滋生，保持空气清洁。

安全性：增湿器用膜不会对人体和环境造成危害。

防漏性：有效防止水分泄漏，保持增湿器的正常运行。

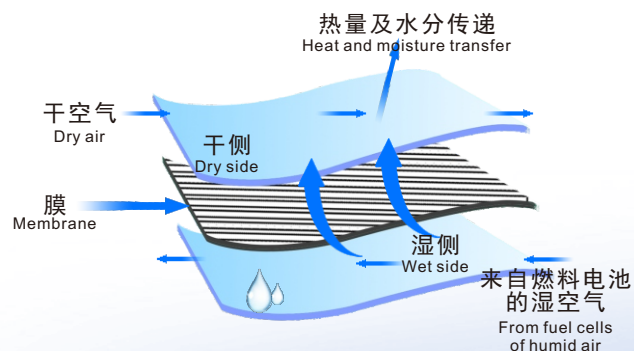
Efficient humidification: Quickly transfers moisture to the air and increases air humidity.

Durability: Withstands prolonged use and repeated cleaning.

Antibacterial: Effectively prevent the growth of bacteria and keep the air clean.

Safety: Humidifier membranes do not pose a hazard to humans and the environment.

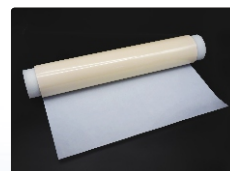
Leak-proof: effectively prevent moisture leakage and maintain the normal operation of the humidifier.



产品规格

Series product

产品型号 Product model	产品厚度 Product thickness	推荐应用领域 Recommended application fields
HCH25-HA09	25±5μm	商用车、应急发电机等 Commercial vehicles, emergency generators, etc
提供客户需求定制化服务 Provide customized services for customer needs		

商用车
Commercial vehicles应急发电机
Emergency generators增湿器膜
Humidifier Membrane

功能性纺织品

Functional Textile





多功能纳米纤维呼吸膜应用场景

Application Scenarios of Multifunctional Nanofiber Respiratory Membranes



军警领域
Military and police field



消防防护领域
Fire protection field



户外运动装备
Outdoor sports equipment



医疗防护领域
Medical protective field



工业防护领域
Industrial protective field



运动休闲民用领域
Sports and leisure in the civilian field



核心优势-全国产化

Core Advantage-Full Localization

汉丞多功能纳米纤维呼吸膜核心优势

The Core Advantages of Hyproof's Multifunctional Nanofiber Respiratory Membrane

高防水度、防菌病毒

High waterproof performance, anti-bacterial and anti-viral

> 2万毫米水柱水压 (200KPa)

水洗50次后, 水压>1万毫米水柱 (100KPa)

> 20,000 mm water column water pressure (200KPa)

After 50 washes, the water pressure > 10,000 mm water column (100KPa)

高透气性

High air permeability

>1mm/s (100Pa)

抗污性

Stain resistance

膜具有高拒油性>6级, 抗污性最佳

The membrane has high oil repellency> grade 6 and has the best fouling resistance

机械性能优良

Excellent mechanical properties

质软但具高柔性, 超高分子量膜材料抗张强度高

Soft but highly flexible, ultra-high molecular weight membrane material has high tensile strength



阻燃性

Flame retardant

膜有杰出的阻燃及不续燃性

The membrane has excellent flame retardancy and non-rescinible flammability

耐高温耐低温

High temperature and low temperature resistance

长期使用工作温度最高可达150°C, 柔韧性佳低温-50°C, 也可保持其伸长率

Long-term use operating temperature up to 150°C, Good flexibility, low temperature -50°C, can also maintain its elongation

耐腐蚀、耐盐雾、耐酸碱

Corrosion-resistant, salt spray resistant, acid and alkali resistant

能耐盐雾、强酸、强碱和各种有机溶剂、强氧化剂的腐蚀

Can resist salt spray, strong acid, strong alkali and various organic solvents, Corrosion of strong oxidants

耐大气、耐紫外、耐老化

Resistant to atmosphere, ultraviolet and aging

长期暴露于大气、紫外光中, 10年保质期

Can resist salt spray, strong acid, strong alkali and various organic solvents, Corrosion of strong oxidants



多功能纳米纤维呼吸膜性能

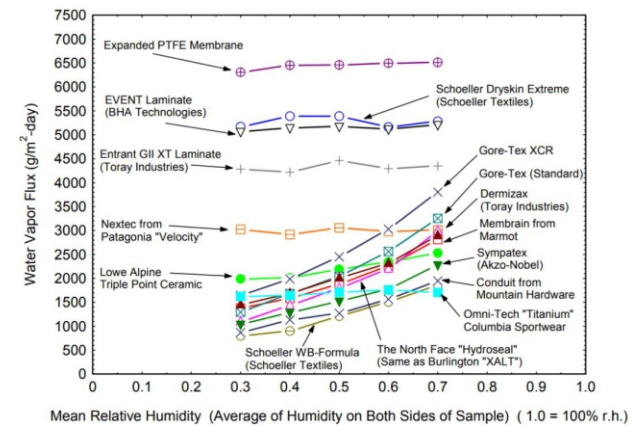
Multifunctional Nanofiber Respiratory Membrane Performance

产品说明

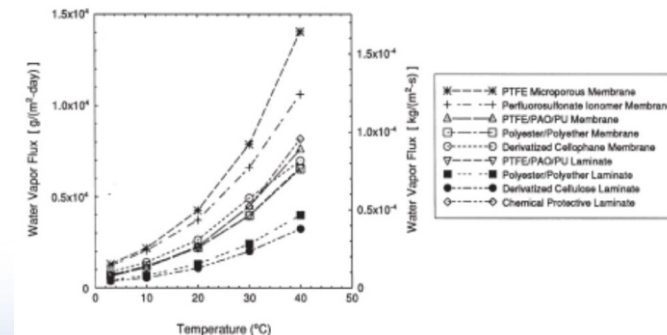
Product description

防水透湿层在不同温度下的透湿率，以PTFE微孔膜透湿性最优，PU类涂层的透湿性最差。在不同湿度下的透湿率，从图例可见PTFE微孔膜的透湿性在任何湿度下都是最高的，聚氨酯PU类涂层的透湿率在较低适度下透湿性很不好，穿着舒适度差。汉丞科技多功能纳米呼吸膜面料通过控制独特微结构的孔隙率，利用对不同织物性能深入了解，结合最新纺织科技，智造出满足各领域应用功能织物。

The moisture permeability rate of the waterproof and permeable layer at different temperatures is the best with PTFE microporous membrane and the worst moisture permeability of PU coating. Moisture permeability at different humidity, it can be seen from the legend that the moisture permeability of PTFE microporous membrane is the highest at any humidity, and the moisture permeability of polyurethane PU coating is very poor at a lower moderate level, and the wearing comfort is poor. By controlling the porosity of unique microstructures, Hyproof Technology's multi-functional nano respiratory membrane fabrics use in-depth understanding of the properties of different fabrics and the latest textile technology to intelligently create functional fabrics that meet the application requirements of various fields.



P.W. Gibson/Polymer Testing 19 (2000) 673-691



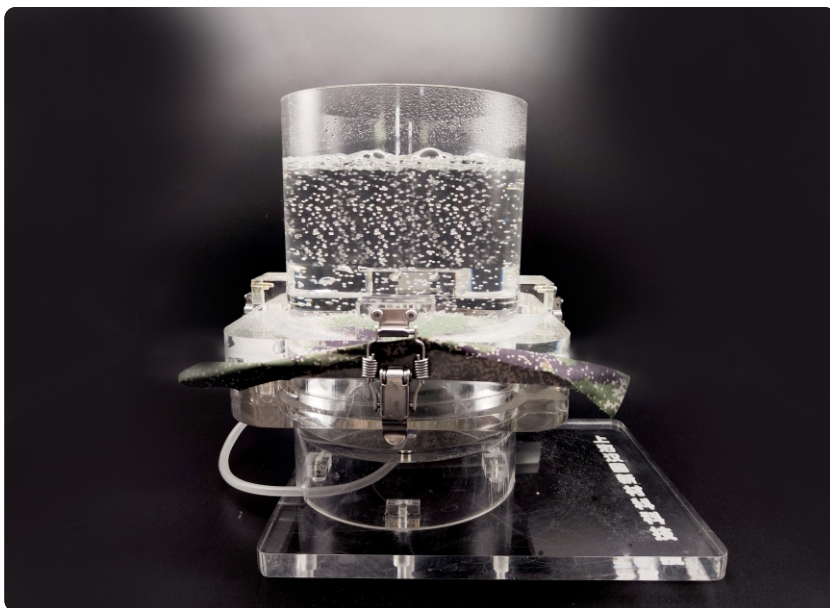


多功能纳米纤维呼吸膜性能

Multifunctional Nanofiber Respiratory Membrane Performance

性能展示

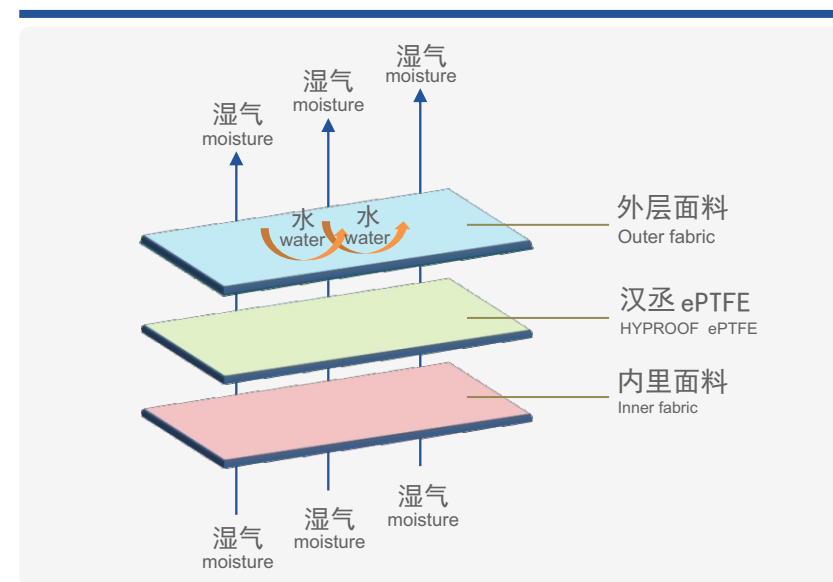
Performance showcase



防水透气
Waterproof and breathable

产品性能

Product performance





多功能纳米纤维呼吸膜应用场景

Application Scenarios of Multifunctional Nanofiber Respiratory Membranes

军警应用

Military police applications

基于防水，防风和透气的功能性面料，汉丞科技军警用面料继续在生产先进的防护服装产品中发挥至关重要的作用。

中国军警研发机构可以从创新的汉丞科技功能面料中受益，致力于研究世界各地恶劣苛刻环境中战士的不断发展的功能需求。

Based on waterproof, windproof and breathable functional fabrics, Hyproof Technology military and police fabrics continue to play a vital role in the production of advanced protective clothing products.

China's military and police R&D institutions can benefit from innovative Hyproof Technology functional fabrics dedicated to studying the evolving functional needs of fighters in harsh and demanding environments around the world.





多功能纳米纤维呼吸膜应用场景

Application Scenarios of Multifunctional Nanofiber Respiratory Membranes

冰雪运动应用

Ice and snow sports applications



冰雪运动装备需要
防风保暖、防水透气
轻便舒适、耐寒耐晒

Snow sports equipment is required
Windproof and warm, waterproof and breathable
Light and comfortable, cold and sun resistant



HYPROOF薄膜功能材料
满足冰雪运动需求
整套服装重量约2kg
可抵御-30°C严寒

HYPROOF membrane functional materials
Meet the needs of ice and snow sports
The weight of the entire outfit is about 2kg
Withstands -30°C cold



医疗防护应用

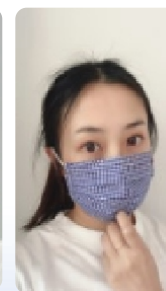
Medical protection applications

防病毒、细菌、防血液穿透、轻便、极佳的透气透湿性能，可高温130°C灭菌，水洗120次，更可制全套病毒隔离防护装备。

汉丞科技可消毒循环使用KN95防护口罩（2020年上海市征用，提供>1000万只口罩滤芯助力复产复工。

Anti-virus, bacteria, anti-blood penetration, lightweight, excellent breathability and moisture permeability, can be sterilized at high temperature 130°C, washed 120 times, and a full set of virus isolation protective equipment can be made.

Hyprooft Technology can disinfect and recycle KN95 protective masks (requisitioned by Shanghai in 2020, providing > 10 million mask filter elements to help resume production and work.





多功能纳米纤维呼吸膜应用场景

Application Scenarios of Multifunctional Nanofiber Respiratory Membranes

应急救援、消防及工业防护应用

Emergency rescue, fire protection and industrial protection applications



防酸碱、防水火、防蒸汽烫伤、轻便、极佳的透气、透湿性能。可多次洗涤后重复使用。可用于电子矿山、铁道、石化、冶炼、勘探、海洋等行业场景，用于整个消防救援服务时，提供最高等级防护性能。

Anti-acid and alkali, fireproof, anti-steam scald, lightweight, excellent breathability, moisture permeability. Can be washed multiple times and reused. It can be used in electronic mines, railways, petrochemicals, smelting, exploration, marine and other industry scenarios, and provides the highest level of protection performance when used in the entire fire rescue service.

大众消费纺织品

Textile for civilian

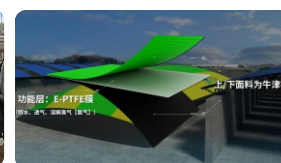
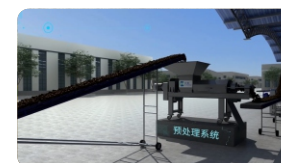
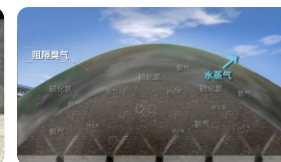
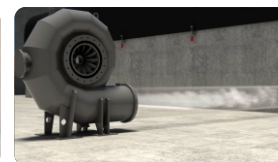
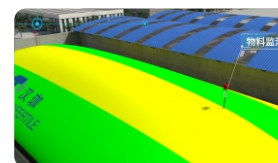
大众消费纺织品应用包括：风衣、休闲便服、裤子、帽子、手套和鞋子、民用帐篷、背包、睡袋、雨披、鞋靴透气垫、攀山服、钓鱼服、高尔夫服、滑雪服、透气性床品、阻燃透气性床品（养老院、高端酒店）、高端汽车罩等。

Textile for civilian applications include: windbreakers, casual casual clothes, pants, hats, gloves and shoes, civil tents, backpacks, sleeping bags, ponchos, shoes and boots breathable mats, climbing clothing, fishing clothing, golf clothing, ski clothing, breathable bedding, flame retardant and breathable bedding (nursing homes, high-end hotels), high-end car covers, etc.



农业环保

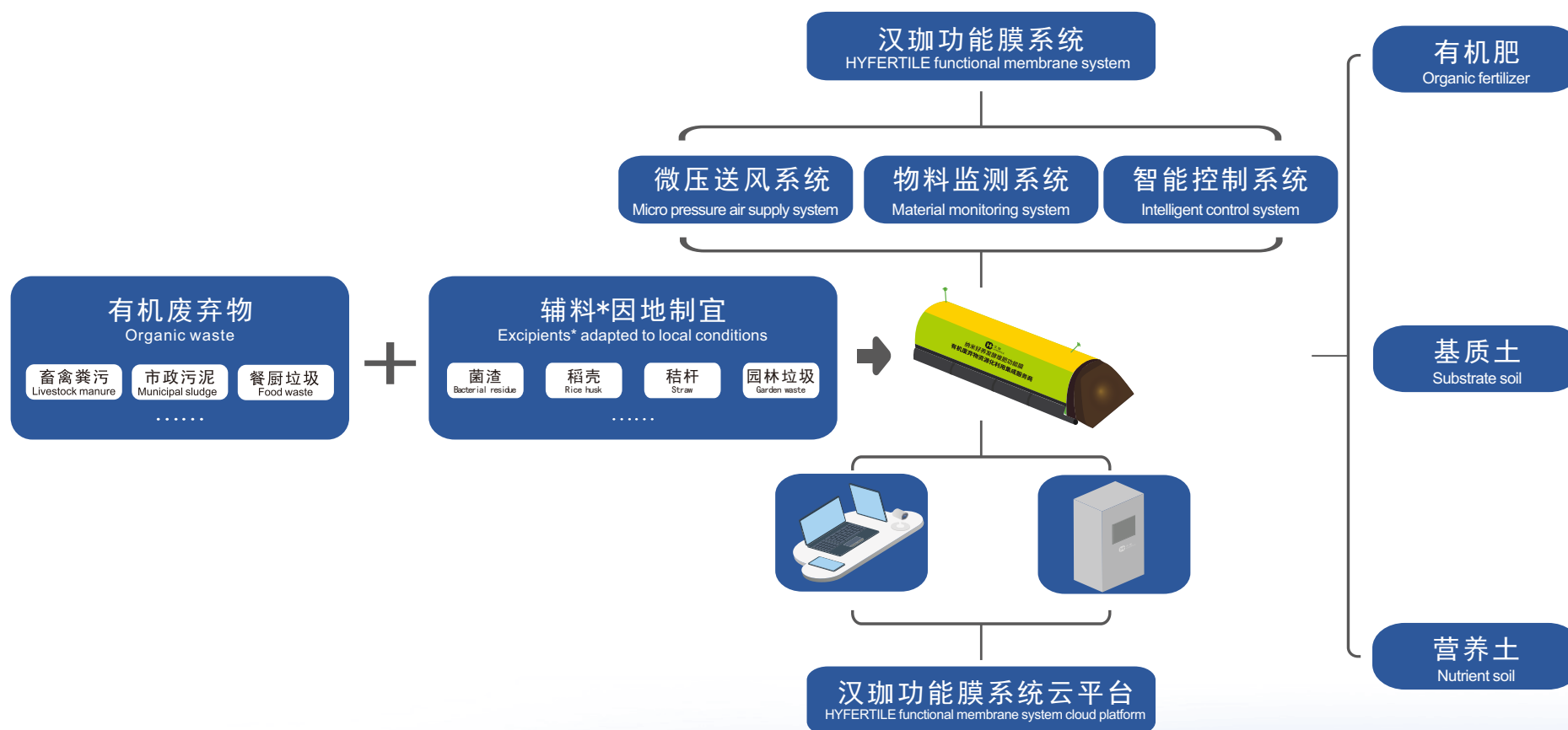
Agricultural Environmental Protection





纳米好氧发酵堆肥功能膜系统解决方案

Nano Aerobic Fermentation Compost Functional Membrane System Solution

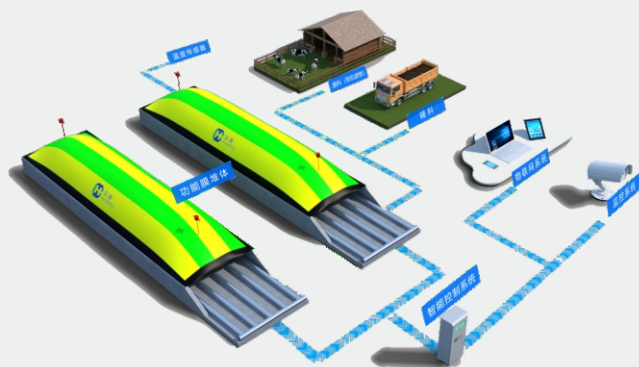




纳米好氧发酵堆肥功能膜设备系统优势

Advantages of Nano Aerobic Fermentation Composting Functional Membrane Equipment System

系统优势
System advantages



6大优势 ADVANTAGES

防水、湿透、杀菌、除臭、阻隔雨雪
Waterproof, wet, sterilized, deodorized,
barrier rain and snow

适用于畜禽粪污、市政污泥、
餐厨垃圾、尾菜、秸秆
Suitable for livestock and poultry manure, municipal
sludge, Food waste, tail vegetables, straw

降低有机肥含水率
Reduce the moisture content
of organic fertilizers

缩短发酵周期
Shorten the fermentation cycle

环保无臭
Environmentally friendly and odorless

减少粪肥氮损失
Reduce manure nitrogen loss

核心 core

汉珈以海归科学家为核心，以高科技为先导。
HYFERTILE takes returnee scientists as the core and
high-tech as the guide

提供 offer

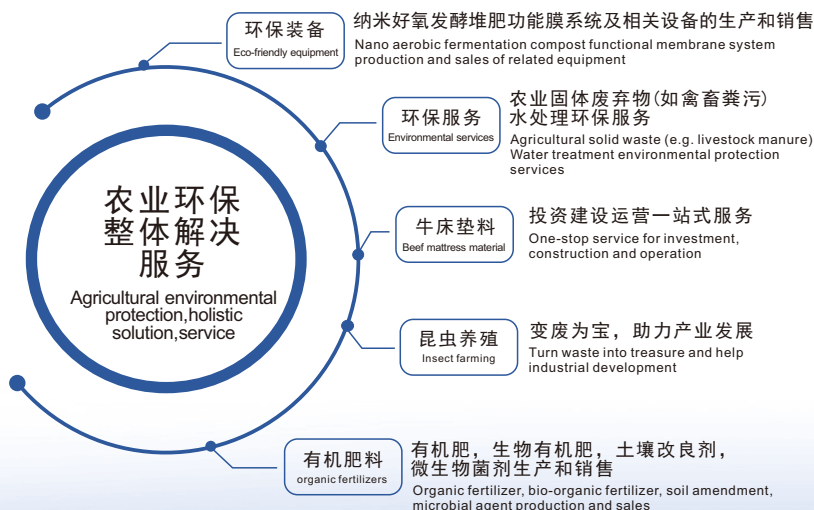
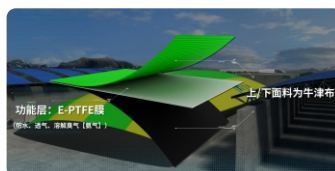
提供有机废弃物资源化利用领域的各类
解决方案。
Provide various solutions for the utilization of organic
waste resources

研发 R&D

核心研发的ePTFE纳米好氧发酵堆肥功能膜，采用“生物+纳米膜”好氧发酵技术，
使有机废弃物就地转化为有机肥料。
The core research and development of ePTFE nano aerobic fermentation composting functional
membrane adopts "biological + nano membrane" aerobic fermentation technology to convert organic
waste into organic fertilizer on site.

拥有 possess

拥有环境检测实验室和技术研发团队、拥有行业影响力的研发生产和投资运营团队。
It has environmental testing laboratories and technical R&D teams, and R&D, production and
investment and operation teams with industry influence.



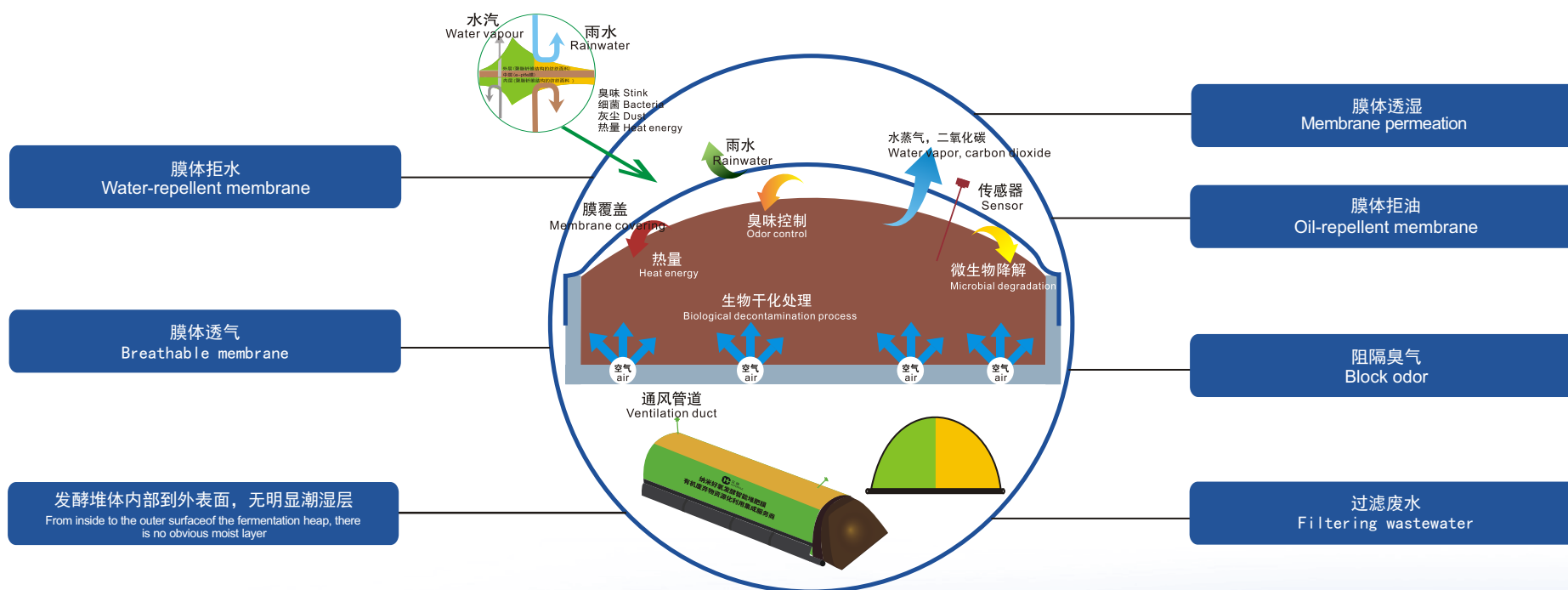


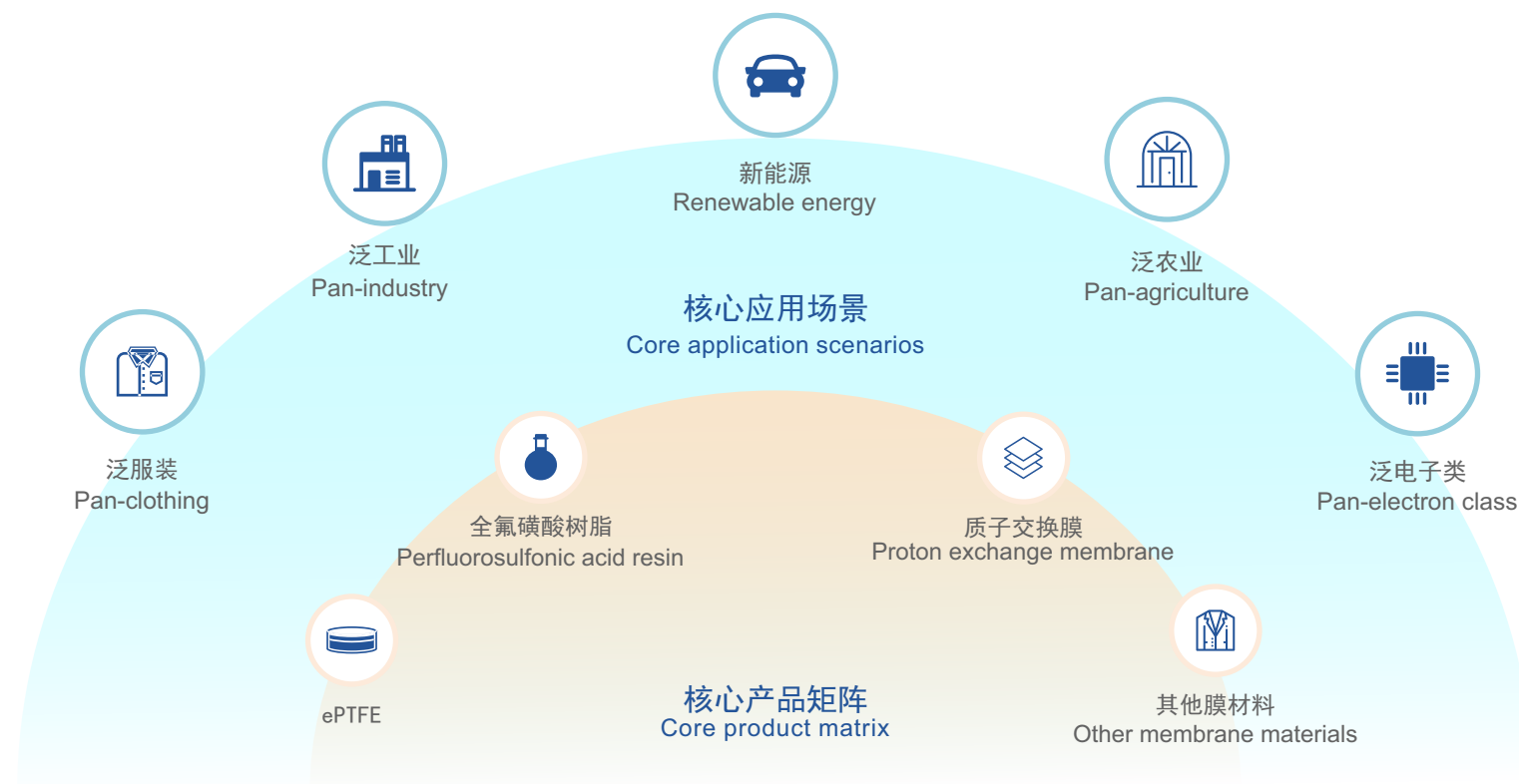
纳米好氧发酵堆肥功能膜核心优势

Core Advantages of Nano Aerobic Fermentation Compost Functional Membrane

纳米好氧发酵堆肥功能膜核心优势

Core Advantages of Nano Aerobic Fermentation Compost Functional Membrane





原材料核心自研突破
真正全链路国产化
产品性能跻身世界前列

Self-research breakthrough in the core of raw materials
Truly full-link localization
The product performance ranks among the top in the world

HYPROOF
汉丞科技

广阔的应用市场及空间
新能源增量市场增速极快
仍有其他亟待拓展场景

Broad application market and space
The incremental market of new energy is growing rapidly
There are still other scenarios that need to be expanded

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Technology for The Benefit of The Country

新材料为美丽中国保驾护航！
Escorting A Beautiful Environment with New Materials



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