Proposta de modernização do sistema de tratamento de água

De CG <gomescarlos221@gmail.com>
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IMG_1518.png (~328 KB) 流程示意图(1).pdf (~387 KB)

Prezados membros da Câmara Municipal,
Boa tarde!

Gostaríamos de contribuir com o desenvolvimento de sua cidade, oferecendo uma solução de tratamento de água que utiliza tecnologia de ponta, com sistemas modernos e eficientes.

Por gentileza, solicitamos que encaminhem as informações abaixo aos demais vereadores, pois acreditamos que este projeto poderá ser de grande importância para a qualidade de vida e o bem-estar da população.

Estamos à disposição para quaisquer esclarecimentos.

Atenciosamente,
Carlos Gomes

2025 JMFILTEC product brochure.pdf

Peço licença para entrar em contato e apresentar uma proposta de tratamento de água para o seu município, utilizando uma das mais modernas tecnologias disponíveis: membranas cerâmicas de carbeto de silício (SiC – Silicon Carbide).

Essas membranas são consideradas uma das tecnologias mais avançadas e resistentes para o tratamento de água e efluentes industriais e municipais.

Estamos cansados de ver as mesmas soluções sendo oferecidas há anos pelas empresas que atuam nesse segmento no Brasil, sem grandes inovações. Muitas vezes, os serviços continuam sendo prestados com as mesmas tecnologias, por preços que nem sempre correspondem à qualidade e aos resultados entregues, além de eventuais interrupções no fornecimento.

*Nós, da empresa chinesa **JMFILTEC**, em parceria com a brasileira **LHP Consulting Co., Ltd**., estamos desenvolvendo contatos e apresentando projetos com uma visão diferente: permitir que municípios tenham sua própria estação de tratamento de água, reduzindo a dependência de terceiros e os elevados custos atualmente praticados.*

É evidente que esse modelo não se aplica necessariamente a grandes cidades ou capitais. Entretanto, para municípios com até 10 ou 15 mil habitantes, acreditamos que essa solução pode se encaixar perfeitamente.

Estamos encaminhando, em anexo, imagens das nossas membranas e um fluxograma ilustrativo de um projeto com capacidade de tratamento de 2.000 m³ por dia (2 milhões de litros de água por dia). Nesse projeto, a água será captada de uma represa localizada a aproximadamente 300 metros de altura.

Trata-se de um projeto que utiliza tecnologia de ponta, com sistema totalmente automatizado, painel de energia solar para ajudar parte nos gastos com energia e sistema totalmente controlado a distância. Projeto para operar 24 horas por dia, durante os 12 meses do ano.

Por gentileza, analise os anexos. Caso tenha interesse em conhecer melhor essa tecnologia e avaliar sua aplicação em seu município, entre em contato conosco. Teremos satisfação em prestar uma consultoria inicial e apresentar mais detalhes do projeto.

A população do seu município merece água de melhor qualidade. Afinal, estamos falando diretamente da saúde e do bem-estar de seus habitantes.

Nossa proposta é que a prefeitura tenha condições de entregar água 100% potável diretamente na tubulação que abastece os moradores, atendendo aos padrões de potabilidade exigidos pela legislação brasileira.

Observação: Eventuais reformas nas tubulações existentes ou novas instalações em residências, poderão ser executadas pela própria equipe da prefeitura, sob nossa orientação técnica.

Acreditamos que este pode ser um excelente projeto para que cada município tenha sua própria estação de tratamento de água, com autonomia operacional, qualidade e eficiência.

Entre em contato conosco. Será um prazer apresentar essa oportunidade.

Atenciosamente,

LHP Consulting Co., Ltd. / JMFILTEC - CHINA

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ZHEJIANG JIANMO TECHNOLOGY CO., LTD.

Factory: No. 7-5, Hexin Road, Jiangshan Economic Development Zone (Lianhuashan Industrial Park), Jiangshan City, Quzhou City, Zhejiang Province (self-declaration)
Marketing Center: Room 18A806, No. 397, Cangxing Street, Cangqian Street, Yuhang District, Hangzhou City, Zhejiang Province (Phase I of Zhejiang University Alumni Enterprise Headquarters Economic Park)
Company hotline: 0571-82873008
Sales hotline: +86 13396532368
Website: www.jmfiltec.com
Company Email: sales@jmfiltec.com

Silicon Carbide Special Ceramic Membrane Manufacturer

JMFILTEC 坚膜科技

Zhejiang Jianmo Technology Co., Ltd.

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COMPANY PROFILE

Zhejiang Jianmo Technology Co., Ltd.(JMFILTEC) was established in 2014. It is a national high-tech enterprise dedicated to the research and development and production of high-quality pure silicon carbide(SiC) membranes. It has completely independent intellectual property rights and is the first pioneer enterprise in the domestic SiC membrane field to break the international monopoly. The invention patent for pure SiC membrane preparation technology was applied in 2013 and authorized in 2016.

JMFILTEC, as a sharing-type enterprise that takes the lead in promoting SiC membrane application technology in China, has established a high-tech enterprise research and development center for SiC ceramic membranes. It has carried out "industry-university-research" cooperation with the Shanghai Silicon Research Institute of the Chinese Academy of Sciences, Zhejiang University, Nanjing University, Fuzhou University, etc., and established the "Zhejiang University-Jianmo silicon carbide Joint R&D Center" with the Zhejiang University Entrepreneurship and Innovation Research Institute.

The company's products include tubular membranes, flat membranes, column membranes and other derivative equipment, which are widely used in drinking water purification and recycled water treatment, seawater desalination and aquaculture, chemical process separation, salt production/chlor-alkali chemicals, mine water treatment, semiconductors and microelectronics, food and medicine impurity removal, salt lake lithium extraction and impurity removal, new energy positive/negative electrode production, photovoltaic waste liquid recovery, oil and shale gas mining and other industries. It has been recognized by customers and the market for its high throughput, corrosion resistance, easy cleaning and long life.

Development History

2014

- Company established
- Successfully developed SiC ceramic membrane



2015

- Small batch production
- The first customer of the product is Liqun Tobacco





2016

- SiC membrane invention patent authorization
- Product upgrade, Liqun Tobacco re-purchase

2017

- Successfully developed large diameter SiC membrane
- New purchase of Henan China Tobacco Golden Leaf





2018

- Membrane preparation R&D center completed
- Achieved the first product export

2019

- Introducing angel investment ——Hangkai Group
- Products began to be exported to Germany



2020

- SiC membrane industrialization pilot base completed
- The largest order of the year was from Japan's Toshiba Mitsubishi



2021

- Completed Series A financing ——Jiangshan Industry Fund
- Jiangshan production base started construction



2022

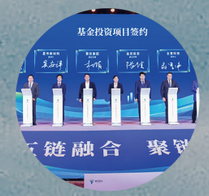
- The production base was completed and put into production
- Rapid breakthroughs in new energy cathode, chlor-alkali and salt production markets



2023

- Included in the "2023 Zhejiang Province's First Batch of Certified New Materials" and the Ministry of Industry and Information Technology's "National Catalogue of Major Environmental Protection Technologies and Equipment Encouraged for Development", etc.
- Won the title of "Specialized, Refined and Innovative" Enterprise in Zhejiang Province and "Per-mu Benefit Award" in Jiangshan





2024

- Won the "Gold" Award at the 28th National Invention Exhibition "Belt and Road" and BRICS Skill Development and Technology Innovation Competition
- Introducing strategic investor Quzhou High-quality Development Fund

2025

Company Qualifications


全国发明展览会
NATIONAL EXHIBITION OF INVENTIONS
获奖证书
AWARD CERTIFICATE
项目编号：E62798　　证书编号：3301001
发　明　者：张云飞　浦桐烟　郑文钰　高腾洋　邵海洋
　　张青宏　汤　洁　周　维　尹金成
完成单位：福州大学　浙江坚膜科技有限公司
项目名称：碳化硅陶瓷膜及其应用
该项目在第二十八届全国发明展览会·“一带一路”暨金砖国家技能发展与技术创新大赛上荣获 金 奖，特颁此证予以表彰。
2024年12月


浙江坚膜科技有限公司
浙江省“专精特新”中小企业
浙江省经济和信息化厅
二〇二三年五月


高新技术企业
证书
企业名称：浙江坚膜科技有限公司　　证书编号：GR202233001176
发证日期：2022 年 12 月 24 日　　有效期：三年
批准机关：


环境管理体系认证证书
GB/T 24001-2016/ISO 14001:2015
IAF IAS


职业健康安全管理体系认证证书
GB/T 45001-2020/ISO 45001:2018
IAF IAS


质量管理体系认证证书
GB/T19001-2016/ISO9001:2015
IAF CNAS


实用新型专利证书


实用新型专利证书


发明专利证书


发明专利证书


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发明专利证书

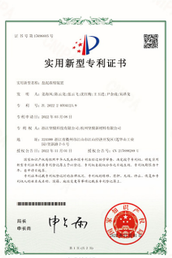

发明专利证书


实用新型专利证书


实用新型专利证书


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实用新型专利证书



Partners

中国船舶 CHINA SHIPBUIL
多氟多化工 DFD CHEM
宝丰能源 BAOFENG ENERGY
BSI TOTAL SOLUTION EXPERT
JMFILTEC 坚膜科技
淮安国联集团 HUAI' AN SJID GROUP
贵州磷化集团 GUIZHOU PHOSPHATE CHEMICAL GROUP
WANHUA
BIEL 伯恩光学
Wujin®
CNSG 中盐集团

Company Strength

JMFILTEC has a production base in Jiangshan City, Zhejiang Province, with an annual production line of 200,000 m^2 of SiC ceramic membranes. The annual production line of 800,000 m^2 of SiC ceramic membranes has been put into construction. After completion and production, it will form a total annual production scale of 1 million m^2 of SiC ceramic membranes, and its supply capacity ranks among the top in the world.

The company's dense multi-channel SiC tubular membrane products are the third company in the world to have the production level of this level of products, in addition to Saint-Gobain, a Fortune 500 company, and Liqtech, a US-listed company. Jianmo Technology is currently the domestic SiC membrane manufacturer with the most product specifications and the most complete product categories. The SiC flat membrane developed by the company is the second company in the world, in addition to Cembrane in Europe, that can meet the product standards of Germany's CERAFILTEC.

The company has passed ISO9001, ISO14001, ISO45001 management system certification; obtained water-related product hygiene license, US NSF-ANSI 61 certification, US NSF-ANSI 42 certification, five-star after-sales service certification, etc. It is a member of the China Environmental Protection Machinery Industry Association; a national high-tech enterprise, a "specialized and new" enterprise in Zhejiang Province, and the first batch of new material certified enterprises in Zhejiang Province. The company's products are included in the "National Encouraged Development of Major Environmental Protection Technology and Equipment Catalog" of the Ministry of Industry and Information Technology, the first batch of application demonstration guidance catalogue of key new materials in Zhejiang Province (2023 edition), and the list of industrial energy-saving, carbon-reducing and water-saving processes, technologies, and equipment in Zhejiang Province (2023 edition). It won the "Gold" Award at the 28th National Invention Exhibition, "Belt and Road" and BRICS Skill Development and Technology Innovation Competition, and is competitive internationally.













PRODUCT INTRODUCTION

SiC membrane is a high-precision microfiltration and ultrafiltration grade membrane separation product made of high-purity SiC fine powder through re-crystallization and sintering technology. It has the characteristics of high flux, corrosion resistance, easy cleaning and long life. The current maximum filtration accuracy can reach 20 nanometers.



SiC tubular membrane products

SiC ceramic membrane is a high-precision microfiltration & ultrafiltration grade membrane separation product made of high-purity SiC fine powder through recrystallization and sintering technology. It has high flux, corrosion resistance, easy cleaning, and long life. The current maximum filtration accuracy can reach 20 nanometers. It combines inert SiC materials with specially screened non-ceramic materials with a unique design and manufacturing process, providing the inherent durability of ceramic materials, and with an investment cost equivalent to or lower than that of organic ultrafiltration membranes, it creates a more reliable, easier to operate, and longer-lasting ultrafiltration product, and achieves the lowest total life cycle cost over a long period of time.

- Operation mode: Cross-flow operation
- Filter principle: internal pressure operation, positive pressure drive



Features and Benefits

- Ultra-high flux: The flux is 3-6 times that of ceramic membranes and 5-30 times that of organic membranes, and it occupies a smaller area, has lower operating costs and requires less supporting investment.
- Safer material: Ultra-high temperature sintering, single ingredient, no residue, no heavy metals, medical grade safety.
- Better filtration effect: The filtration accuracy covers microfiltration, ultrafiltration and nanofiltration, meeting various water purification needs.
- Extra-long service life: It can be used for more than 5 years in strong acid, strong alkali and high temperature environment; it can be used for more than 20 years for ordinary water purification.

Application Areas

- Brine Refining
- Cutting fluid treatment
- Nano powder washing and concentration
- Material separation
- Solid-liquid separation with high solid content
- Oil-water separation
- Solid-liquid separation in harsh chemical environments (acid purification, nano-powder catalyst recovery)

SiC column membrane products

SiC column membrane is an innovative product that breaks the boundary between the application scenarios of inorganic membranes and organic membranes. It combines the advantages of ceramic membrane products' durability and organic membrane products' high packing density. Its usage is very similar to that of organic membrane column membranes. It makes up for the shortcomings of ultrafiltration membrane technology such as high requirements for influent water quality, high backwash water consumption, and risk of wire breakage. It can improve the water yield of the ultrafiltration system and reduce the cost of chemical cleaning.

This product is composed of multiple built-in SiC ceramic filter elements. The unique structural design makes the hydraulic distribution of the flow channel of each tubular membrane during water production and backwashing more uniform, and the backwash recovery effect is outstanding.

- Operation mode: dead-end/micro-cross-flow operation
- Filter principle: internal pressure operation, positive pressure drive



Features and Benefits

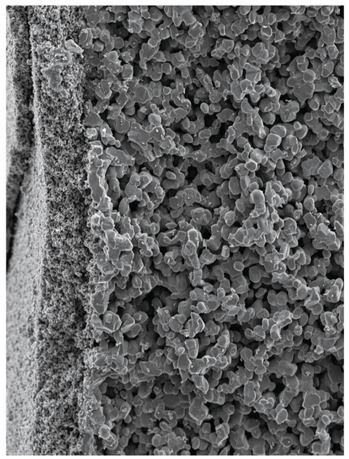
- The core material SiC is a more advanced and ideal ceramic membrane material than alumina, with better hydrophilicity, higher porosity, excellent cleaning and recovery ability, and no fear of oil pollution;
- High mechanical strength, no risk of wire breakage, good wear resistance and impact resistance, long-term operation, and stable water quality;
- Good anti-pollution performance, resistant to water inlet fluctuations, and stable flux in long-term operation;
- Good chemical stability, acid and alkali resistance, strong oxidant resistance, high temperature organic solvent resistance, cleaning resistance and easy recovery of flux after cleaning;
- High filtration accuracy (up to 20nm), which can effectively remove pollutants such as particles, colloids, microorganisms, organic matter, etc. in water;
- The system pretreatment requirements are low, which reduces the total system investment and operating costs;
- Vertical installation, standardized and modular design, simplifying system piping;
- Competitive investment cost and excellent life cycle;
- Compatible with conventional organic membrane ultrafiltration systems.

Application Areas

- High standard purification of drinking water
- NF&RO pretreatment
- Thermal Power Plant
- Mine water treatment
- Semiconductor Industry
- Photovoltaic wastewater
- New energy industry

SiC flat membrane products

JMFILTEC SiC flat membrane components are modular, scalable filtration units consisting of a glass fiber reinforced plastic shell and a flat ceramic membrane. The membrane components integrate the water production channel internally while being able to withstand higher pressures. Our membrane components have been simulated by CFD fluid mechanics and tested in practice to achieve the best performance of the flat ceramic membrane. Each standard membrane component contains 2 water production channels with a maximum water production capacity of up to 3200LMH (24m²/hr). The entire shell and all accessories do not contain any metal, so they can be used in the harshest applications while extending their service life. In addition, no surrounding frames or hose connections are required between the membrane components.

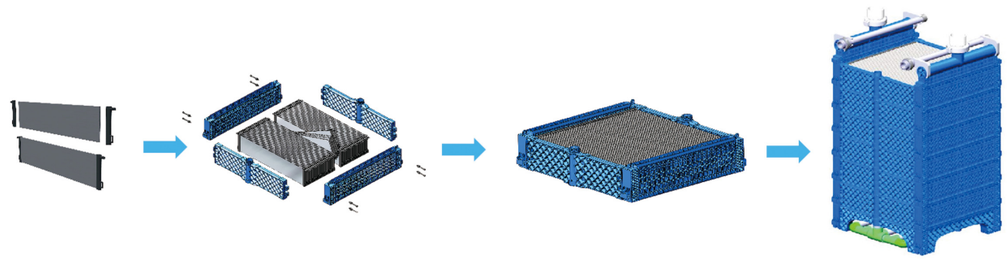


· The highly negatively charged membrane surface can ensure excellent anti-fouling properties in a wide pH range;
· Ideal operating conditions: When the amount of PAC added is less than 6, the membrane surface can maintain a negative charge of −25 to −30 millivolts, making it difficult for dissolved organic carbon and transparent exopolymer particles to adhere to the membrane surface;
· It is easy to clean negatively charged substances in the water from the membrane surface, such as bacteria, algae, TLSS, transparent exopolymer particles and oil substances.

Main technical parameters of SiC flat membrane elements and membrane modules

filtration area	0.177 m²
Support material	SiC
Filter material	SiC
Membrane pore size	100nm
Dimensions	L600*W145*T6 mm
Operating temperature	4–50℃
pH	2–12
Maximum operating pressure	−600mbar
Maximum backwash pressure	1.2bar
Cleaning method	backwash/air scrubbing/ spraying/chemical cleaning

Dimensions	746*715*160 mm
Dry weight	44.8 Kg
Membrane shell material	NORYL™resin 30% glass fiber reinforced mixed PPE/PS
Number of plates	42
Distance between plates	8 mm
Filtration area	7.5 m²
Maximum flow rate	24 m³/h
Maximum negative pressure (suction) pressure	−0.6 bar
Maximum positive (backwash) pressure	1.2 bar
Operating temperature	5–45 ℃



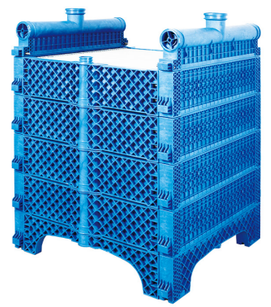
The membrane components are assembled in a building block style, and the distance between membrane elements is adjustable.

Features and Benefits

· The membrane components are assembled in a building block style, and the distance between membrane elements is adjustable
Features and Benefits
· The core material, SiC, has better hydrophilicity, higher porosity, excellent cleaning and recovery ability, and is not afraid of oil pollution;
· High-throughput operation requires less filtration area, saving a lot of cost expenditure;
Good anti-pollution performance, resistant to water inlet fluctuations, and stable flux in long-term operation;
· Good chemical stability, resistant to acid and alkali, strong oxidants, high temperature, organic solvents, resistant to cleaning and easy to recover flux after cleaning;
· Suitable for seawater and other challenging applications without any risk of corrosion issues;
· Fully modular as there is no surrounding frame – the number of modules per tower can be changed at any time to optimize project costs or increase future processing capacity;
· The most compact design: no need to set up independent water production pipelines, and the membrane system is highly integrated;
· Competitive investment cost and excellent life cycle.

Application Areas

- Membrane Bioreactor
- Inorganic particles solid-liquid separation
- Seawater desalination pretreatment
- Sludge Thickening
- Powdered activated carbon coupled double-effect filtration
- High standard purification of drinking water
- Brine Refining



CASE SHOWS

Seawater desalination

28,800 tons/day salmon farming water treatment project











High standard purification of drinking water



35,000 tons/day overseas drinking water purification project, targeted removal of PFAS





30,000 tons/day domestic municipal water supply project

New energy industry



Negative electrode material:
Graphite acid leaching and impurity removal, solid−liquid separation



Positive electrode material:
Zero discharge of iron phosphate washing water (acid process)



Electrolyte material
Lithium hexafluorophosphate:
Fluorosilicic acid co−production of nano−silicon dioxide washing acid Solid−liquid separation



Chlor–alkali chemical brine refining













Acidic liquid solid–liquid separation



400 m^3/d filter press diacid membrane recovery system

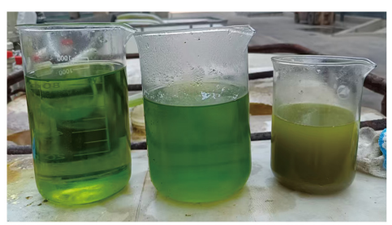


10 m^3/h oil–water separation containing 30wt% hydrochloric acid solution

Acidic liquid oil–water separation

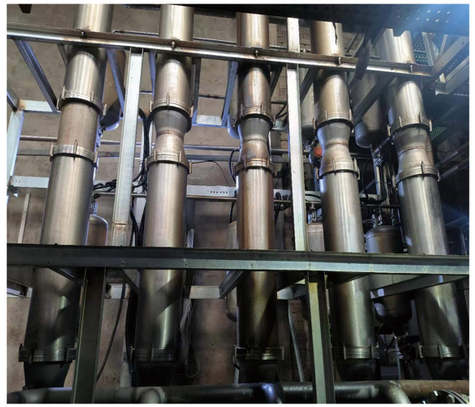






Oil–water separation: liquid hazardous waste resource conversion











Mine water treatment









Brine MBR system in coal chemical industry







Papermaking process reconstituted tobacco





Silica sol concentration



COOPERATION AND SERVICE

What we can do for you

Small-scale and pilot test: Qualitative analysis of separation effects and extraction of industrial design parameters.

Selection and design of membrane products: Based on your needs, we can provide you with configuration lists, process flow charts, rack and pipe connection diagrams, 3D design and other technical services.

Equipment leasing: To reduce the risk of use and initial investment costs for customers, we provide a pay-per-use service. The subsequent maintenance is borne by JMFILTEC. Customers can enjoy JMFILTEC's high-quality and professional services at a lower cost.

Replacement service: supports customer system upgrades and provides old-for-new service. It can replace or substitute any reused system, conduct valuation, recycling and disposal of recycled systems, and reduce the pollution to the environment caused by random disposal of waste systems. JMFILTEC practices environmental protection concepts with actions.

Zhejiang Jianmo Technology Co., Ltd. provides you with a variety of SiC membrane products and full life cycle application technical support.

