

ALGINATE  
FIBER  
TECHNOLOG

Healcell

Healcell 海纤<sup>®</sup> 生物

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We chat

[www.healcell-seaweed.com](http://www.healcell-seaweed.com)

**Alginate Fiber | Conductive Fiber**

Shandong Healcell Biomaterial Technology Co, Ltd.

# Healcell 海纤® 生物

Alginate Fiber | Conductive Fiber

Global provider of R&D and application solutions for marine new materials

## INTRODUCTION



### Shandong Healcell Biomaterial Technology Co., Ltd.

Shandong Healcell Biomaterial Technology Co., Ltd. is headquartered in Yantai, Shandong, China, with 30,000 mu (approximately 2,000 hectares) of marine area under its control, ensuring oversight from the source of seaweed cultivation. Healcell Biomaterial is a global provider of research, development, and application solutions for marine new materials. We conduct in-depth research on seaweed and silver, applying and serving across the fields of safety, comfort, and health. Committed to advancing the production, R&D, sales, and global industrial application of marine new materials, flexible conductive/ shielding materials and smart wearable products, we strive to contribute to improving the quality of human work and life.

Healcell Biotech has established raw materials as its core competitive advantage, with years of deep cultivation in the field of marine biomaterials. The team comprises 1 academician, 2 PhDs, and 15 senior industry operation and management experts. As one of the few domestic enterprises that have fully mastered the core technology of alginate fiber, the company has achieved a breakthrough in developing carrier-free ultra-pure alginate polysaccharide fiber material, filling the technological gap in alginate fiber R&D both domestically and internationally. It has become a leader in the alginate fiber industry.

As of December 2025, Healcell Biotech team has 20 invention patents and 30 utility model patents, and has participated in the formulation/revision of 5 national standards, 6 industry standards, and 4 group standards. It is a global company with internationally leading capabilities in specialized fields, equipped with comprehensive R&D, production, and service capabilities for new material supply chains. With over a decade of expertise in functional materials, the company has successively developed and launched products such as Healcell® alginate fiber, Healthy® seaweed composite fiber, Healthy® seaweed carbon mud fiber, and Scilovel® silver fiber series. These products are applied in the fields of biomedicine, medical aesthetics and health, aerospace, smart wearables, and functional textiles.

## Our Brands

Healcell 海纤®

Healthy 海丝林®

SCILOVEL®  
银时代 Science love life  
AG+

# Healcell 海纤® 生物

The whole industry chain of new marine biological materials technology

Healthly 海丝林®

Seaweed Quick-drying Fiber



Healthly 海丝林®

Seaweed Deodorizing Fiber



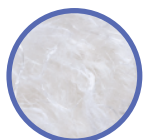
Healthly 海丝林®

Seaweed Carbon Mud  
Moisture-absorbing Heating Fiber



Healcell 海纤®

Alginate Fiber



Healthly 海丝林®

Seaweed Carbon  
Mud Conductive Fiber



Alginate Fiber

Seaweed Composite Fiber

Seaweed Carbon Mud Fiber

Extraction of bioactive substances from marine organisms

Carbonization firing

Low temperature extraction of inert gas refining technology

Seaweed cultivation occupies  
2000 hectares of sea area



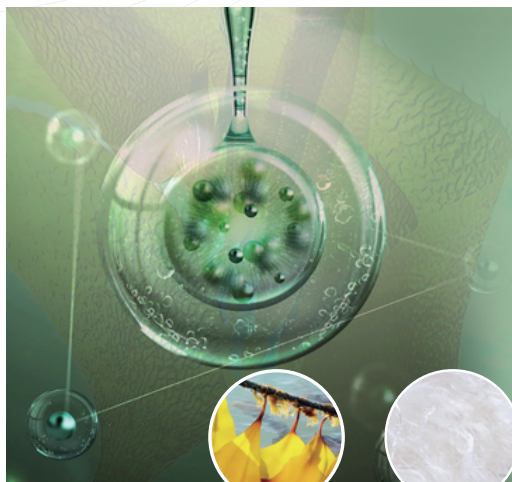
# Healcell海纤® | Alginate Fiber

Environmentally degradable | Intrinsically flame retardant | Bio-antibacterial  
Deodorizing | Far-infrared | Negative ions | Antistatic | Mold-proof

Tested by Authorized Institutions

Invention  
Patent

Environmentally Friendly Degradable  
7A Antibacterial



Marine algae resources are abundant and renewable, with the fiber yield from one acre of seawater equivalent to that of 5-10 acres of land-based fiber production. Leveraging the advantage of proprietary marine areas to develop offshore aquaculture can ensure raw material supply from the source and achieve full industrial chain control over raw materials.



2000 hectares of sea area



Alginate Fiber



Yarn



Fabric



Products

Plant fibers derived from the ocean, environmentally friendly and biodegradable. Healcell® alginate fiber (Patent No.: ZL200810157267.6) is made from natural seaweed as raw material. Through low-temperature extraction and inert gas refining technology, polysaccharides and various vitamins from seaweed are extracted and processed.

The alginate fiber, renowned as the "natural textile skincare product of the new era," possesses excellent environmentally friendly degradability, intrinsic flame retardancy, biological antibacterial properties, deodorization, far-infrared emission, negative ion generation, antistatic effects, and mildew resistance. Its antibacterial efficacy against *Escherichia coli*, *Candida albicans*, and *Staphylococcus aureus* far exceeds the national 7A-grade standard.

## Extensive Application Fields:

### Biomedicine

Biocompatible, with gel-forming, absorbent, degradable, and long-lasting antibacterial properties, used for medical dressings, rapid hemostasis, pressure ulcer prevention, and burn/scald treatment.



### Medical Aesthetic Health

Anti-acne and antibacterial, moisturizing and breathable, absorbs pigments.

### Smart Wearable Devices

Traditional Chinese medicine for disease prevention, pathological analysis function, personalized customization, with enhanced functionality, recognition, and entertainment value.

### Functional Textiles

Excellent antibacterial, deodorizing, antistatic, far-infrared, and negative ion properties have been applied in the textile field.

### Aerospace

Aerospace materials are flame-retardant, antibacterial, and antifungal, releasing negative ions, and are used for interior decoration of spacecraft, automobiles, and other vehicles.

# Healthy 海丝林® | Seaweed Deodorizing Fiber

Bio-antibacterial | Deodorizing | Far-infrared | Negative Ions



Healthy® Seaweed composite fiber (Patent No.: ZL201010244256.9) extracts active ingredients such as seaweed biological extracts and infuses them into the fiber interior using nanotechnology, forming a natural and healthy multifunctional fiber.

## 7A Grade Antibacterial

Washable 150 Times

The antibacterial rate against Staphylococcus aureus is 99%  
The antibacterial rate against Escherichia coli is 94%  
The antibacterial rate of Candida albicans is 96%

## Instant Odor Elimination

Acetic acid odor component concentration reduction rate reaches 91.4%  
Ammonia odor component concentration reduction rate reaches 96.2%  
Isovaleric acid odor component concentration reduction rate reaches 93.9%  
Nonenal odor component concentration reduction rate reaches 87%

## Extensive Application Fields:



### Underwear

Vest/Bra/ Underwear/Long Johns/Tube Top/Period Panties/Shapewear/Under-shirt, etc.



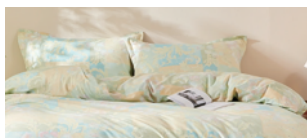
### Maternity and Baby Products

Nursing Bras / Maternity Belts / Baby Clothing / Drool Bibs / Waterproof Pads Maternity Pants / Blankets, etc.



### Fashion wear Workwear, Sportswear

Hoodies/T-shirts/Suits/Casual Wear Jeans/Work Wear/Home Wear/Sports-Wear/Yoga Wear, etc.



### Home Textiles

Tablecloths/Sofa Covers/Bedding Sets Curtains&Wallpapers/Dust Covers Throw Pillows/Doormats, etc.



### Footwear and Socks

Inside of Shoes/Insoles/Socks



### Toys and Pet supplies

Plush Toys / Pet Supplies (Clothing / Beds / Toys)

# Healthy 海丝林® | Seaweed Quick-drying Fiber

SEAWEED FIBER

Moisture-wicking | UV Protection | Bio-antibacterial | Deodorizing

Invention  
Patent

Tested by Authorized Institutions

Moisture-wicking



Seaweed Quick-drying Fiber

Yarn

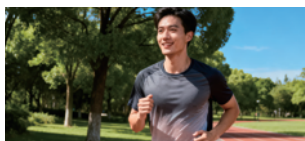
Fabric

Products

Unlike the moisture-wicking and quick-drying technologies available on the market that are achieved through coating or finishing processes, all technical improvements are made at the raw material level.

Healthy® Seaweed Quick-Dry Fiber (Patent No.: ZL201010244256.9) achieves moisture-wicking performance by extracting bioactive marine substances and other components, which are incorporated into the fiber to form a microporous structure. This fiber exhibits antibacterial, deodorizing, and UV protection properties, with a UV protection efficacy exceeding 50+.

## Extensive Application Fields:



### Sports Apparel

Running Suits, Fitness Wear,  
Basketball Uniforms, etc.



### Outdoor Gear

Inner layers for Jackets, Quick-dry  
Pants, and Mountaineering Suits



### Daily Wear

T-shirts, Shirts, Underwear, Socks, etc.



### Special Industry Clothing

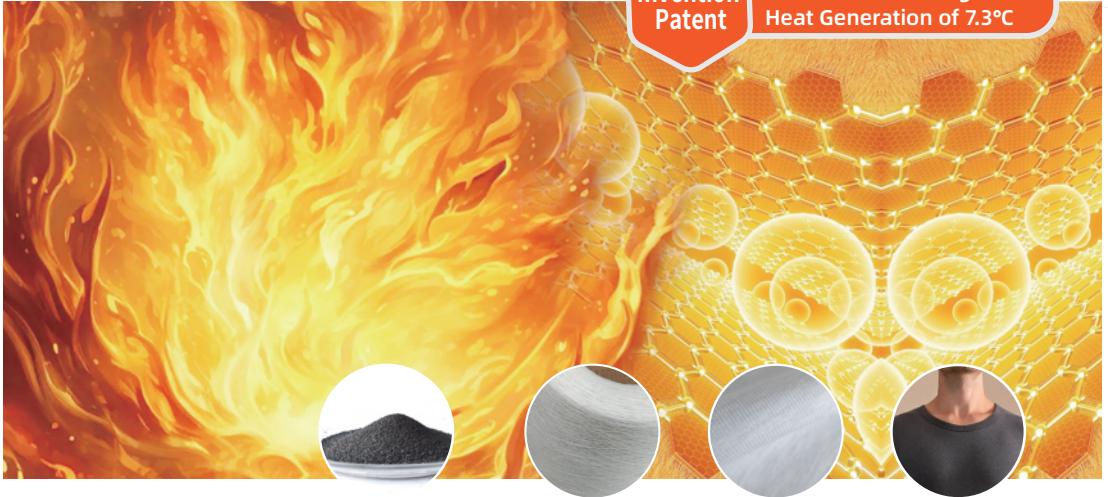
Medical/Medical Staff Uniforms,  
Workwear, Training Uniforms, etc.

**Moisture-wicking&heat-generating | Far-infrared | Negative ions  
Bio-antibacterial | Deodorizing | Antistatic**

Tested by Authorized Institutions

**Invention  
Patent**

**Moisture-Absorbing  
Heat Generation of 7.3°C**



Seaweed kiln-burned ash

Yarn

Fabric

Products

**Moisture absorption heating 7.3°C  
Far-infrared radiation temperature rise reaches 1.5°C  
Negative ion generation amount: 3054units/cm<sup>3</sup>**

Healthy® Seaweed Charcoal Mud is a natural ash product derived from seaweed varieties (such as kelp, kombu, and sargassum) through specialized kiln firing. The invention holds the patent number: ZL201610116439.X. Depending on the raw materials and processing techniques, it is categorized into Healthy® seaweed charcoal moisture-absorbing and heat-generating fiber, and Healthy® seaweed charcoal UV-protective fiber.

## Extensive Application Fields:



### Close-fitting Thermal Underwear

Moisture-wicking & Heat-generating  
Negative Ions/Far-infrared/Antibacterial/Deodorizing /Anti-static



### Health Protection Equipment

Sodium elements in seaweed charcoal mud are transformed into carbonized sodium oxide, providing warmth and promoting metabolism.



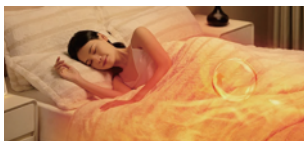
### Outdoor Sports Series

Mountaineering Wear/Ski Wear/Travel Clothing/Camping Sleeping Bags/Outdoor Photography Apparel, etc.



### Footwear and Socks

Business Sports Socks/ Winter Thermal Boots / Shoe Insoles



### Home Textiles

Bedding/Sofa Covers/Cushions/Throw Pillows



### Toys and Pet Supplies

Plush Toys / Pet Supplies (Clothing Beds / Toys)

Conductive | Antistatic | Far-infrared | Negative Ions  
Bio-antibacterial | Deodorizing



Invention Patent

Tested by Authorized Institutions  
Conductive | Antibacterial

Seaweed kiln ash material

Yarn

Fabric

Products

Peak voltage:  $-9.9 \times 10^2 \text{ V}$   
Half-life (HDT): 0.094s

Healthy® Seaweed Charcoal Mud is a natural ash product derived from specially kiln-fired seaweed (including kelp, laver, and sargassum). It holds a patented invention (Patent No.: ZL201610116439.X). When combined with other materials, it forms conductive Seaweed Carbon Mud Conductive Fiber.

## Extensive Application Fields:



### Special Workwear

Precision Electronics Workwear/Chemical industry Workwear/ Flammable-workshop Workwear/Medical Cleanroom Workwear, etc.



### Smart Wearable

Sleep Monitoring Suit/Sports-wear/Touch Gloves/Smart Rehabilitation Training Suit/Smart Military and Police Equipment



### Robotic Skin

Key Core Materials for Robotic Skin-Flexible Adaptability/Persistent Anti-static/Safe Compatibility



### Tram Sickness

Tram Interior /Antistatic Cushion/antistatic Pollution Patch



### Daily Wear

Underwear/Sports Apparel/Shoes and Socks/Winter Warm Clothing/Home Textiles, etc.



### Toys and Pet Supplies

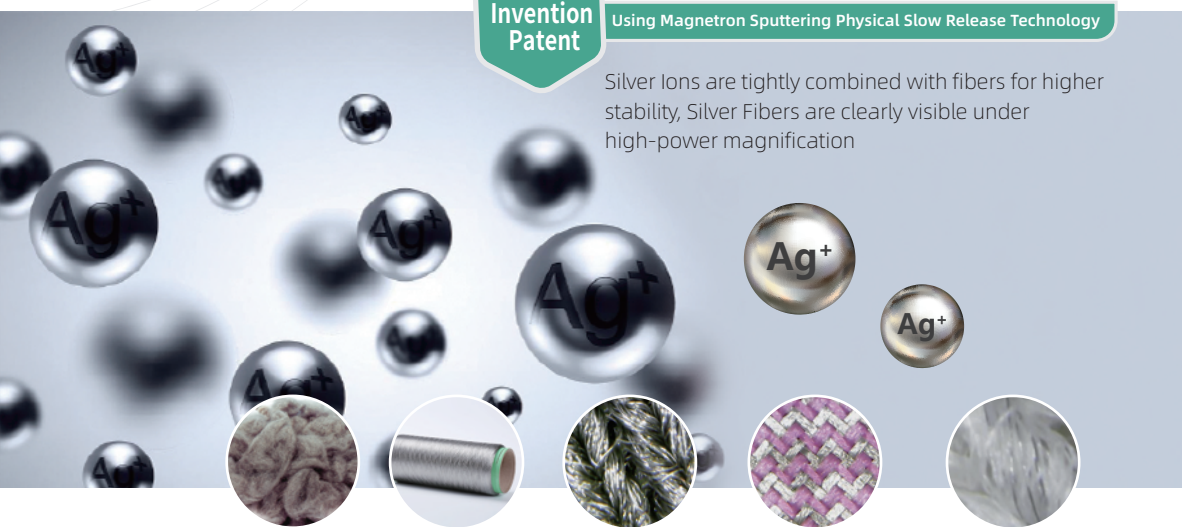
Fur Toys/ Pet Supplies (clothing/ Beds/ toys)

**Conductive | Antistatic | Physical Antibacterial | Deodorizing**  
**Radiation Protection | Heat Reflective | Washable**

**Invention Patent**

Using Magnetron Sputtering Physical Slow Release Technology

Silver Ions are tightly combined with fibers for higher stability, Silver Fibers are clearly visible under high-power magnification



Silver Fiber

Silver Filament

Full Silver Fabric

Semi-silver Fabric

Antibacterial Fabric

Scilovel® is a functional antibacterial silver fiber and fabric produced by our company, holding national innovation patent (Patent No.: ZL201911232133.0). It adopts advanced silver ion magnetron sputtering physical slow-release technology (where metallic silver is shot like bullets into the fiber interior and bonded with it, relying on the released silver ions to combine with pathogen surface protein molecules, inhibiting pathogen metabolism to achieve antibacterial purposes). The advent of Scilovel® functional antibacterial silver fiber has filled a market gap for functional antibacterial fibers.

**Flexible conductive shielding materials refer to conductive materials with excellent flexibility, which can serve as electrode contact points and conductive lines in terms of morphology and performance. In smart wearable devices, these materials can be utilized to manufacture products that are lighter, thinner, and more stable.**

## Extensive application fields:

**Smart Wearables**  
Smart Sportswear / Intelligent Temperature-Control Vest Anti-Snoring Smart Pillow, etc.

**Functional Textiles**  
Underwear  
Workwear Fashion Sportswear  
Footwear & Socks  
Home Textiles/Pet Supplies

**Biomedical**  
Radiation-proof medical equipment  
Medical equipment sensors  
Medical supplies/Special workwear/Intelligent medical monitoring

**Aerospace**  
Shielded tent/shielded room/industrial security cover/anti-counterfeiting net

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Global provider of R&D and application  
solutions for marine new materials

**Alginate Fiber | Conductive Fiber**

**Strategic Cooperation**

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