

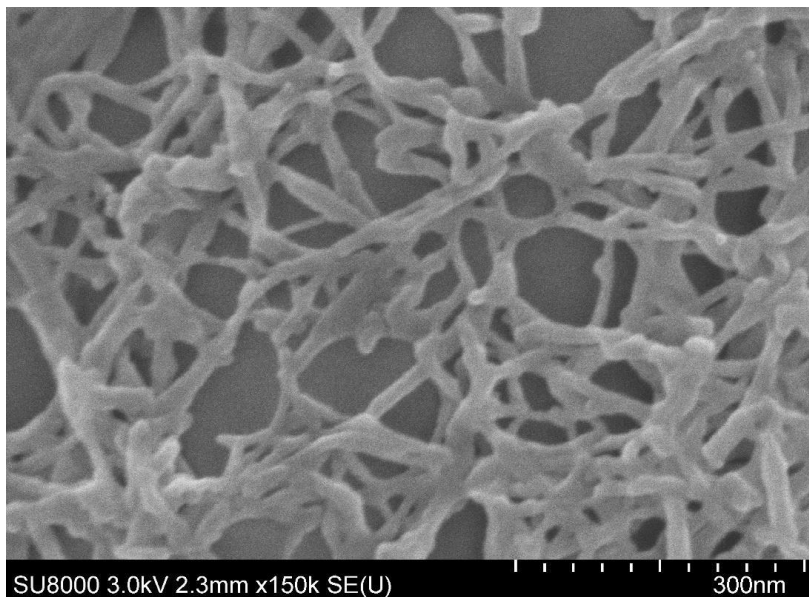
Ultrasound from cedar, corn, and sugarcane Separating cellulose to make nanocellulose and nanocellulose fibers

Successful development of environmentally friendly biofuel production technology

Produces cellulose without relying on sulfuric acid or sensitive enzymes. Also produces nanocellulose and nanocellulose fibers

(Head office: Sagami City, Kanagawa Prefecture; President: Miyuki Shibano), the world's only manufacturer of powerful ultrasonic deburring technology, has succeeded in developing a technology to separate cellulose from the world's three largest biomass (Japanese cedar, American corn, and sugarcane residue/bagasse from Okinawa, Thailand, and Brazil) using powerful ultrasonic technology. The company has succeeded in developing a technology for stable production of ethanol by separating cellulose from the world's three major biomass (Japanese cedar, U.S. corn, and sugarcane residue/bagasse from Okinawa, Thailand, and Brazil) using powerful ultrasound. Without using sulfuric acid or enzymes, the destructive impact force of ultrasonic waves crushes and separates lignin to extract cellulose. This is the birth of a technology that can contribute greatly to protecting the rich forests of Japan and to solving the world's environmental and food problems. Patent pending.

In addition to cellulose, the overall production of nanocellulose and nanocellulose fibers was also confirmed.



[URL] <https://blue-galaxy.co.jp/>

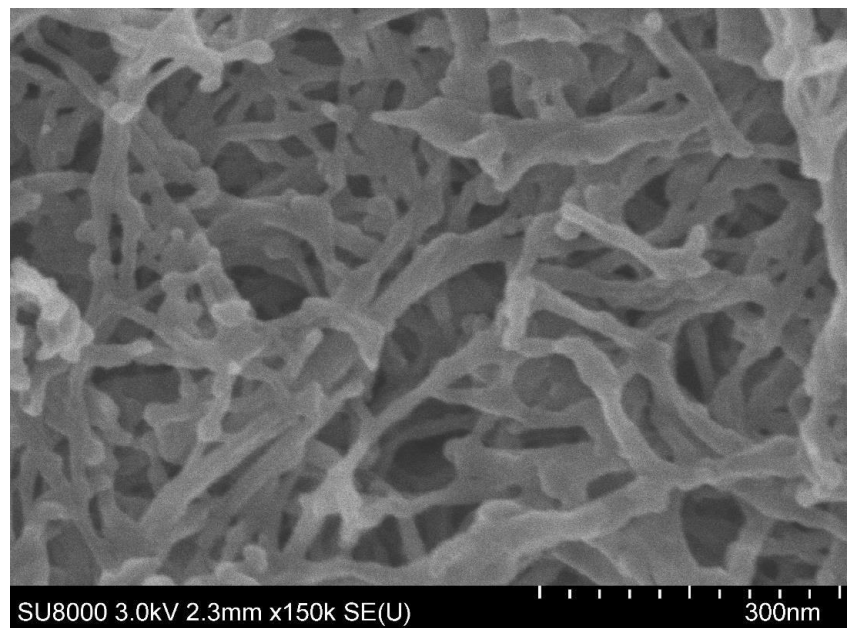
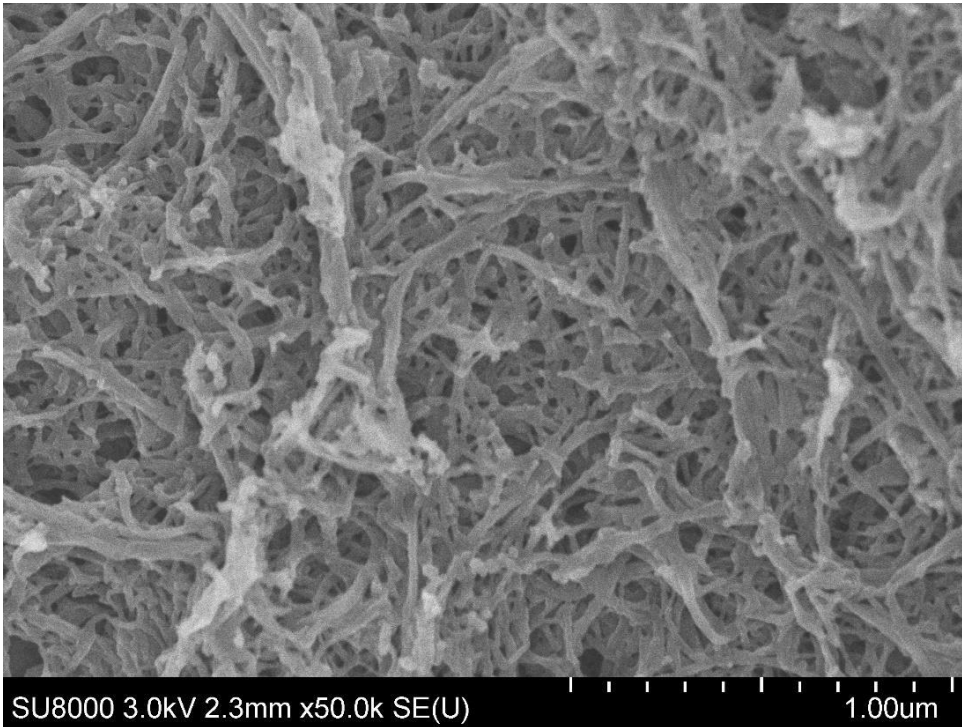
Cellulose is extracted by powerful ultrasound, without the use of delicate enzymes or dangerous sulfuric acid.

Cedar, corn stalks, and bagasse are mechanically ground to about 1 mm in size and immersed in water. The water is then irradiated with powerful, unparalleled ultrasonic waves. The ultrasound generates countless vacuum balls of 10mm diameter in the water (called cavities), and these vacuum energy balls are created and annihilated 20,000 times per second. The vacuum energy balls are created and annihilated 20,000 times per second, generating intense positive and negative shock waves in the water, which pulverize the biomass and turn it into sludge.

Cedar 20 times before treatment



The reaction takes place inside a cylindrical tube. This reaction takes place inside a cylindrical tube, and as the biomass flows through the cylinder, it becomes finer and finer, giving rise to cellulose in the nano range.



Bioethanol made possible by the world's only one and strongest ultrasonic deburring manufacturer

We are the world's only manufacturer of ultrasonic deburring/cleaning equipment with a proven track record of delivering our products to many of Japan's leading manufacturers, including Japanese automobile manufacturers. We are an eternal venture company with a delivery record to 14 countries around the world. During the development of more powerful ultrasound, we discovered that ultrasound can produce cellulose from a variety of biomass and applied for a patent. Bioethanol production using ultrasound is now possible.

At the same time, it meant that organic supramolecular polymers could be reduced to the limit.

It means that organic macromolecules can be pulverized without the use of dangerous acids or expensive, difficult-to-use enzymes. Nano-grinding is possible in all fields. Perhaps even synthesis.

One of the applied technologies is the successful development of HA4 low molecular weight hyaluronic acid, an organic ultra-high polymer. We will also enter the skincare business to improve wrinkles and restore skin moisture.

Comments from the Chairman of the Board in charge of development

Our company is now overflowing with dreams.

It has been 35 years since 1990, when we presented our innovative water sonication technology at an international conference in the United States and received the Stratospheric Ozone Protection Award from the U.S. EPA (Environmental Protection Agency). Now that technology is about to blossom. We are proud to offer our customers a wide range of dreams based on our platform of intense ultrasonic cavitation application technology.

Ultrasonic manufacturing of new materials, both inorganic and organic, has started toward nano-miniaturization.

Past Product Examples and Future Prospects - Innovative Technologies for Earth-Friendly Water

Our company is an eternal venture. Since our founding, everything we do has been based on world-first products. Our main product, the ultrasonic deburring cleaner, is the only one in the world. Customers from all over the world visit our company every day to conduct deburring experiments. The results of their experiments lead them to purchase our equipment. Of course, we use water.

Environmentally friendly technology must compete with other technologies in terms of cost, and this requires that the technology be studied and improved. We have been pursuing the impact power of cavities in water (microvacuum nuclei) without any hesitation. The following products are the world's only ones that are recognized by everyone.

Examples of products developed to date

Ultrasonic deburring and cleaning machines PERION series; https://blue-galaxy.co.jp/?page_id=605

Vacuum pretreatment type deburring and cleaning equipment MARS series; https://blue-galaxy.co.jp/?page_id=621 超音波バリ取り研磨装置 VEGA MR series; https://blue-galaxy.co.jp/?page_id=6041 全自動バリ取り VEGA-DB series of cleaning equipment; https://blue-galaxy.co.jp/?page_id=507

The BlueShock series of ultrasonic deburring/cleaning equipment starting from a single cup;

https://blue-galaxy.co.jp/katarogu/BlueShock_20231127.pdf

Requests to customers in need of assistance

We are committed to providing our customers with the highest quality products and services.

Contact [URL](https://blue-galaxy.co.jp/?page_id=12): https://blue-galaxy.co.jp/?page_id=12

About Blue Star R&D Inc.

Company Description

We are a manufacturer of ultrasonic cavitation application technology. Our main products are ultrasonic deburring and cleaning equipment. We are expanding into various fields of business based on our core technology, powerful and unmatched ultrasonic technology.

Company Profile

Company name: Blue Star R&D, Inc. Head office
location: 252-0241

1-31-1 Yokoyamadai, Chuo-ku, Sagami-hara-shi,
Kanagawa Representative Director: Miyuki Shibano
Business description: Development, manufacture and sales
of ultrasonic application equipment Established: April
2010

HP: <https://blue-galaxy.co.jp/>

HP URL in 14 languages: <https://blue-impact.biz/>

