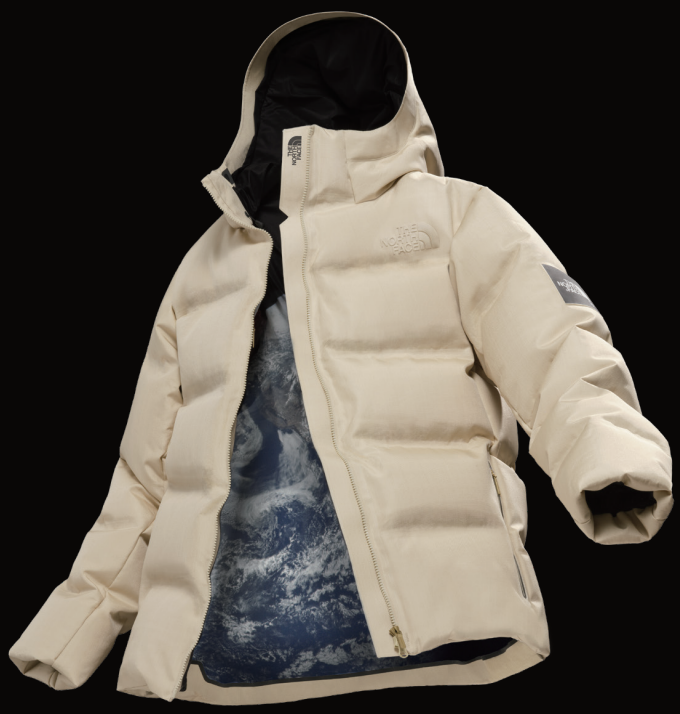
PRESS RELEASE

2019.08.29



MOON PARKA

EVERY GIANT LEAP
BEGINS WITH ONE SMALL STEP

GOLDWIN x Spiber Joint Research and Development

Announcing THE NORTH FACE *Sp.* "MOON PARKA", the world's first outerwear jacket to utilize microbially-produced protein materials

Pre-sale entries begin August 29, 2019

GOLDWIN Inc. (Goldwin) and Spiber Inc. (Spiber) are pleased to announce that the MOON PARKA outerwear jacket is set for a limited release on December 12, 2019. The MOON PARKA utilizes structural protein materials that Goldwin and Spiber have been jointly developing since 2015. Applications to enter the pre-order lottery for the chance to purchase the MOON PARKA started at 18:00, August 29, 2019.

The MOON PARKA is the second item launched under THE NORTH FACE and Spiber's collaborative project, THE NORTH FACE *Sp.* The parka, with an outermost layer made from 100% jointly-developed Brewed Protein[1] materials, is the world's first commercially available outerwear jacket to utilize structural proteins produced through a microbial fermentation process that does not rely on petrochemical resources (as of August 29, 2019; research by the Japan-based *Structural Protein Industry Association*). The MOON PARKA takes its name from the word *moonshot*, an attempt to achieve an extremely difficult task for the sake of the enormous impact that its success would entail.

The four years of research and development since the initial MOON PARKA prototype was unveiled has led to an extensive evolution in the product. The latest iteration of the jacket features a simple, timeless design well-suited to any setting—from street to summit—with fabric that satisfies Goldwin's strict durability and stability quality standards. A breathable, waterproof laminate forms the middle layer of the shell, and the inner padding, taking inspiration from the expedition-use, cold-resistant Himalayan Parka in THE NORTH FACE's Summit Series, uses 900 fill power CLEANDOWN to ensure heat retention. Laid out on the inner lining is a photograph of planet Earth as taken by the Apollo 11 crew during mankind's first successful visit to the lunar surface. This serves to embody the concepts behind the MOON PARKA—the boundless possibilities of humanity, as well as the conviction that the bold and daring can conquer any obstacle.

Goldwin and Spiber believe that it is the duty of the present generation to shift away from a short-term, consumerist economic model based on the use of non-renewable petroleum resources, and to move towards a sustainable, long-term economic model based on the use of renewable, sustainable resources. Through our joint research and development initiative, we are striving to re-evaluate our way of thinking about the relationship between nature and mankind. By considering how to balance functionality with environmental considerations, and by examining the role of products and the economy, Goldwin and Spiber hope to arrive at a solution for creating sports apparel items which can support a lifestyle in harmony with nature. In doing so, we believe we can make a considerable contribution to the development of a sustainable world. It is this belief that drives our continued effort towards this goal.

[1]Brewed Protein materials are the protein fibers, films, and other types of materials manufactured using Spiber's proprietary fermentation (brewing) process. Brewed Protein materials show great potential for use in a wide range of industries. With a production process that utilizes plant-derived sugars as primary raw ingredients, Brewed Protein materials are well placed to address increasing market pressure for animal-free, microplastic-free alternatives in the apparel industry. The unique, customizable nature of Brewed Protein materials also shows potential to fulfill growing demand in the automotive and aerospace industries for lighter-weight materials. Through an evolutionary and iterative optimization process which begins at the molecular level, Brewed Protein materials can be tailored to suit the needs of each specific application.

Product Information

Product:	MOON PARKA	
Price:	150,000 JPY + tax	
Size:	S, M, L, XL (unisex)	
Color:	Moon Gold	
Material:	Outer:	Brewed Protein waterproof plain weave (3 layers)
	Outer (surface layer):	100% unclassified fiber (Brewed Protein)
	Outer (middle layer):	100% waterproof/breathable laminate
	Outer (reverse layer):	100% polyester
	Inner padding:	CLEANDOWN®KODENSHI®900 PRO (76% down, 20% conjugated yarn (polyethylene/polypropylene), 4% feather)
	Lining:	100% polyester

Product Sales

The MOON PARKA is a limited-release item of 50 pieces. For a chance to win the right to purchase the MOON PARKA, please apply via the pre-order lottery form on the website listed below. Entries are limited to within Japan only. Successful entrants will be sent further details by email and may finalize their purchase at THE NORTH FACE LAB store starting December 12, 2019.

Entry period: 18:00, August 29, 2019 to 14:00, October 31, 2019
URL: https://www.sp.spiber.jp/tnfsp
Place of sale: THE NORTH FACE LAB (2F Shibuya PARCO, 15-1 Udagawa, Shibuya, Tokyo; opens November 22, 2019)

Please address any press enquiries regarding this release to:
GOLDWIN Inc. Corporation Communication Office | pr@goldwin.co.jp
Spiber Inc. PR Office | contact@spiber.jp

Images for press use may be found at the following URL:
https://app.box.com/s/h4si1e4lvdmg7tv0pfv9jsio19d482mk

ADDITIONAL INFORMATION

VISION

At present, the majority of sports apparel items available on the market are produced using synthetic polymers such as polyester or nylon. Many of these materials are made from petroleum, a resource created over hundreds of millions of years as organic matter is exposed to high pressure and heat underground. In the last few hundred years—a mere blink of the eye in terms of the Earth's history—mankind has removed vast quantities of petroleum from the ground for consumption, resulting in a variety of pressing environmental issues. These include sudden changes in weather and temperature patterns caused by the increasing concentration of carbon dioxide in the Earth's atmosphere, as well as increasing levels of pollution in both the air and the sea.

The market costs for many products which use petroleum-derived materials do not take into account the environmental and social costs of their use. Accordingly, we believe that it is the duty of the present generation to shift away from a short-term, consumerist economic model based on the use of petroleum resources, and to move towards a sustainable, long-term economic model based on the use of renewable and recyclable resources. Through the joint research and development initiative between Goldwin and Spiber, we are striving to re-evaluate our way of thinking about the relationship between nature and mankind. By considering how to balance functionality with environmental considerations, and by examining the role of products and the economy, we hope to arrive at a solution for creating sports apparel items which can support a lifestyle in harmony with nature. In doing so, we believe we can make a considerable contribution to the development of a sustainable world. It is this belief that drives our continued effort towards this goal.

DEVELOPMENT HISTORY

Goldwin and Spiber's collaboration began in 2015, sparked by a shared passion for addressing global-scale environmental problems. The joint research and development initiative between the two companies began with a focus on replicating spider silk, a natural structural protein material, for use in apparel products. One of the largest challenges in utilizing *fibroin*—the protein found in natural spider silk—for an application such as the outer shell layer of the MOON PARKA is the fact that natural spider silk exhibits a property called 'supercontraction.' For example, the extremely tough dragline silk that spiders rely on as their lifeline is known to contract by up to ~50% in length when exposed to water. The protein material which Spiber initially developed, QMONOS (based on the Japanese word *kumonosu*, meaning 'spider web'), is taken from the fibroin proteins found in dragline silk, and accordingly inherited this supercontraction property.

As we considered how best to prepare our materials for use in end products, we concluded that it would be difficult to reduce this water-induced supercontraction effect to levels capable of meeting GOLDWIN's exacting quality standards. Accordingly, we went back to the drawing board, beginning with a fresh analysis of the genes involved in natural fibroin production. This approach allowed us to isolate and remove the amino acid layout responsible for the supercontraction effect. Additionally, we also used this opportunity to implement further modifications to the amino acid sequence which resulted in drastic increases in microbial productivity.

Repeating this process of molecular optimization—which mimics the process of natural evolution—while passing our improved materials through our proprietary spinning, weaving, and processing technologies, resulted in the creation of a new protein textile material which was capable of maintaining its dimensions even when wet. Having cleared GOLDWIN's standards for both durability and stability, the MOON PARKA product development journey was finally complete. The new material used in the jacket's shell layer has come a long way from the initial synthetic proteins based on natural spider silk.

The amino acid sequence and material processing used for the MOON PARKA's material differ from those used in the Planetary Equilibrium Tee, announced in June 2019 as the first product released under THE NORTH FACE *Sp.* project. Accordingly, these two materials vary considerably in terms of physical properties and performance, and serve to demonstrate the primary strengths of protein materials: diversity matched by the capacity to be tailored for specific end-use applications. Rather than focusing on a reference to one specific material type, the "Brewed Protein" name for our new materials pays homage to Spiber's proprietary production technology.

ADDITIONAL INFORMATION

MATERIAL

Brewed Protein

Brewed Protein materials are the protein fibers, films, and other types of materials manufactured using Spiber's proprietary fermentation (brewing) process. Brewed Protein materials show great potential for use in a wide range of industries. With a production process that utilizes plant-derived sugars as primary raw ingredients, Brewed Protein materials are well placed to address increasing market pressure for animal-free, microplastic-free alternatives in the apparel industry. The unique, customizable nature of Brewed Protein materials also shows potential to fulfill growing demand in the automotive and aerospace industries for lighter-weight materials. Through an evolutionary and iterative optimization process which begins at the molecular level, Brewed Protein materials can be tailored to suit the needs of each specific application.

Production process of Brewed Protein materials

At Spiber, we begin by designing the genes that code for the desired structural proteins. We then introduce those genes into microorganisms which are engineered to produce the protein in a highly productive manner. Raw materials such as sugars and minerals are required as sources of energy and nutrients for the microorganisms to produce proteins. In the Brewed Protein production process, these raw materials are prepared in large-scale tanks, the microorganisms grow and multiply, and the proteins are produced at high efficiency via fermentation. After fermentation comes the purification process, in which proteins are separated from the microorganisms themselves. The purified proteins are then dried and the resulting powder is processed into a variety of forms, such as fibers and films.

PROJECT

ImPACT

The *Impulsing Paradigm Change through Disruptive Technologies Program* (ImPACT) was a research and development program established in 2014 by the Japanese Cabinet Office. Spiber was selected to serve as the primary research institution for ImPACT's *Super High-Function Structural Proteins to Transform the Basic Materials Industry* project until its conclusion in March 2019, for a period of almost 5 years. In cooperation with 9 academic institutions and 19 corporate partners, Spiber played a leading role in the research and development of novel synthetic protein production and application development. As a result of this collaborative effort, Spiber developed a range of materials for use in apparel, automotive, and satellite applications, as well as engaged in the production of a variety of end-product prototypes. Participation in the ImPACT program also resulted in the accumulation of a considerable amount of IP and patent applications.

CONSORTIUM

CASPI

CASPI (managed by the *Structural Protein Industry Association*)
The *Consortium for the Advancement of the Structural Protein Industry* (CASPI) was formed upon the completion of the *Impulsing Paradigm Change through Disruptive Technologies* (ImPACT) program in March 2019. The consortium, founded upon the R&D results and intellectual property of the ImPACT program, is a private initiative that promotes the industrial development and social implementation of structural protein materials. As the first member of CASPI, Spiber conducts business development and alliance building across a wide range of industries and uses. These initiatives are accomplished through the continued accumulation and sharing of intellectual property vital to expanding the use of synthetic protein materials, as well as by accelerating open innovation through collaborations across industry, academia, and businesses. The *Structural Protein Industry Association* serves as the managing body for CASPI.

ADDITIONAL INFORMATION

COMPANY

GOLDWIN Inc.

GOLDWIN Inc. (President and Representative Director: Akio Nishida, Head Office: 2-20-6 Shoto Shibuya-ku, Tokyo, Japan) was founded in 1951 in Oyabe, Toyama, Japan. The company is focused on promoting high-performance sportswear in Japan under the corporate philosophy of "Encouraging a healthier, meaningful life through sports," both with its original Goldwin brand, as well as brands including THE NORTH FACE, HELLY HANSEN, ellesse, DANSKIN, Speedo, and Canterbury. With its integrated management approach—encompassing steps from R&D and planning through to production and sales—Goldwin strives to provide superior products and services to its customers.

Spiber Inc.

Spiber Inc. (Representative Executive Officer: Kazuhide Sekiyama, Head Office: 234-1 Mizukami, Kakuganji, Tsuruoka, Yamagata, Japan), established in September 2007, is a Japanese biotechnology venture engaged in the development of novel sustainable materials. The company recently announced Brewed Protein, its proprietary structural protein materials produced through an entirely in-house brewing (i.e. fermentation) process. Free from reliance on animal and petroleum resources, this revolutionary new material is well positioned to contribute to animal-free and plastic-free initiatives in the apparel and automotive industries. Including significant government grant support, Spiber has raised over 30 billion yen (more than 275 million USD) to date, and is currently engaged in the construction of its first overseas plant, a world-class structural protein production facility in Thailand.

BRAND

THE NORTH FACE

Established in 1966 in San Francisco, THE NORTH FACE is an outdoor brand providing products for a wide variety of activities, ranging from trekking, running, winter sports, and climbing, to traveling and camping. In addition to owning the trademark rights to THE NORTH FACE in Japan and South Korea, GOLDWIN Inc. is engaged in brand development via its strategic partnership with THE NORTH FACE USA.