

April 23, 2019
Spiber Inc.

Announcement of ¥6.5B funding round

Loan and lease from MUFG Bank, Ltd. and other sources to be utilized to advance structural protein material production and R&D facilities

Spiber Inc. (Representative Executive Officer: Kazuhide Sekiyama, Headquarters: 234-1 Mizukami Kakuganji, Tsuruoka, Yamagata, hereinafter “Spiber”) is pleased to announce the execution of a ¥5B commitment line contract via a syndicate loan led by MUFG Bank, Ltd. (Representative Director, President, and Executive Officer: Kanetsugu Mike) and with the participation of regional financial institutions The Yamagata Bank, Ltd. (Director and President: Kichishige Hasegawa), The Shonai Bank, Ltd. (Representative Director and President: Masashi Ueno), and TSURUOKA SHINKIN BANK (Managing Director: Yushi Sato). Funds obtained from this round will be used toward the planned construction of a mass production plant for the fermentation and purification of structural protein materials in the Eastern Seaboard Industrial Estate (Rayong), Thailand (*1).

Additionally, Spiber has executed a ¥1.5B lease contract with Mitsubishi UFJ Lease & Finance Company Ltd. (President & CEO: Takahiro Yanai), for the purpose of expanding and upgrading the company’s spinning, R&D, and other facilities at its headquarters in Tsuruoka, Yamagata.

Funds from this round will help establish the foundation for medium and long term growth through their utilization in the construction of Spiber’s Thai plant and the improvement and expansion of domestic facilities.

As opposed to synthetic fibers such as nylon and polyester, Spiber’s structural proteins are manufactured without the use of petroleum. Instead, Spiber’s proprietary fermentation process utilizes plant resources to produce proteins which can be processed into a variety of materials such as fibers, films, and resins. Spiber’s protein materials, with their wide range of possible applications and non-reliance on petroleum resources, demonstrate considerable potential for use as sustainable mainstay industrial materials throughout a range of fields and industries.

Spiber is driving innovation in the materials industry via the implementation and industrialization of its structural protein materials. Through this initiative, Spiber hopes to contribute to the resolution of global issues and the realization of a sustainable society.

*1: Eastern Seaboard Industrial Estate (Rayong)

(In Thai: นิคมอุตสาหกรรมอีสเทิร์นซีบอร์ด(ระยอง))

The Eastern Seaboard Industrial Estate in Rayong is an exemplar of the Thai government’s Eastern Economic Corridor initiative. Located near Laem Chabang, site of Thailand’s largest international port, the Estate is home to a variety of factories belonging to both Japanese and other foreign manufacturers from the automotive and other industries. The Estate was established in 1996.



■ About Spiber

Founded:	September 26, 2007
Location:	234-1 Mizukami Kakuganji Tsuruoka, Yamagata 997-0052, Japan
Representative Executive Officer:	Kazuhide Sekiyama
Paid-in Capital:	¥22.44366 billion (incl. capital reserves, etc.)
Employees:	224 (as of April 23, 2019)
Homepage:	https://www.spiber.jp/en

Established in 2007 and based in Yamagata, Japan, Spiber Inc. is a biotech startup engaged in the development of sustainable, structural protein materials for use as mainstay industrial materials. Spiber's co-founders, Kazuhide Sekiyama and Junichi Sugahara, began researching spider silk protein synthesis in 2004 at the Keio University Institute for Advanced Biosciences in Tsuruoka, Yamagata. Their efforts led to the development of Spiber's proprietary QMONOS® protein material, as well as the successful establishment of the world's first mass production techniques for its production. Spiber's proprietary technology allows for the design and production of a hugely diverse range of proteins with different features and forms, all without the reliance on petroleum resources commonly seen amongst other synthetic fibers.

■ About Spiber's synthetic structural proteins

Proteins—biopolymers which serve as essential building blocks of life—are formed from linear assemblies commonly containing as many as 20 different types of amino acids. With a near limitless number of possible combinations, the sequences of amino acids directly determine the protein's features and characteristics, and the process of evolution has driven the creation and refinement of the multitude of existing proteins which support life on Earth today.

Some proteins, such as enzymes and antibodies, are responsible for a variety of physiological functions within living creatures. Others, such as those found in the cytoskeleton of cells or in spider silk, play a more structural role. At Spiber, we call the latter type 'structural proteins'. Examples of structural proteins include keratin, found in hair and nails, and collagen, an important component in skin and bones.

Spiber's proprietary synthetic structural proteins have been designed or selected for from an almost limitless pool of possible amino acid combinations, before being produced via a microbial fermentation process. Our proprietary technology allows for the design and production of a hugely diverse range of proteins with different features and forms, all without the reliance on petroleum resources commonly seen amongst other synthetic fibers.

■ Regarding Spiber's planned construction of a structural protein fermentation and production plant in Thailand

The construction of the new plant represents Spiber's first expansion to an overseas location. Approximately 100 times larger in scale than the pilot facility operated by Spiber in Tsuruoka, Yamagata, and with a planned production capacity of several hundred tonnes per year, the plant is expected to be the world's largest structural protein fermentation facility (as of April 23, 2019; independent research). As a base of operations for research and development into fermentation and purification technologies for structural proteins, the new plant will also serve as a model for the establishment of further global production facilities. Thailand abounds in the biomass resources which are essential for fermentation production processes, and also serves as a hub for both apparel and automobile manufacturing, two key industries for Spiber's materials. With government-driven initiatives to promote the swift realization of sustainable development goals, Thailand represents a perfect location for Spiber to pursue its mission of addressing global-scale issues and helping to actualize a sustainable global society. Construction on the plant is scheduled to begin by the latter half of 2019, and commercial production is expected to commence from 2021. Proteins produced at the plant will be shipped to Spiber's Tsuruoka facilities for spinning or processing into other material types. These materials are anticipated to be used across a variety of applications, such as apparel products and automobile components.