

https://www.ube-exsymo.co.jp/en/



Unique = []

It's not about being unconventional or conspicuous. Neither does it mean playing to popularity nor seeking to be amusing.

It means creating technology that is [unequaled]. And what is needed to attain this is [sincerity]. It is also necessary to continue seeking [breakthroughs] in areas thought to be unattainable up until now.

That is the "unique" at which we at UEXC excel. We incorporate ideas into materials to create new levels of value. It is our wish to provide the people of the present age and the people of the future with prosperity through "functional materials".

That is why we will continue with our own style of "unique" into the future.

Unique =

[Unequaled

Being unique means to be unequaled.

The products we create contain tiny parts that nobody notices, and each one provides a level of performance that cannot be judged from its appearance. Some of these are packed full of innovative ideas and breakthrough technologies that have been unthinkable up until now. The key to this is catering to the needs of the age, providing solutions for the issues that customers face, and solving all problems from the bottom up. We ask ourselves what makes something truly useful, and what should be done to realize it. We devise flexible concepts—that's how we create unequaled technology.



5 Core Technologies of UEXC

UEXC was founded in 1966 during the peak of high-level growth. For more than half a century, we have continued our quest to discover the potential in "functional materials" in alignment with rapid changes in the times.

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Core Technology

Extrusion Molding

Enhancing strength and versatility



A technology that molds plastic into a wide range of different forms by melting and mixing resin, extruding it from molding dies, and cooling and hardening it. The materials used for this include polypropylene, polyethylene, nylon, ABS, polyethylene terephthalate (PET), and other thermoplastic resins. These resins soften and are easily molded when heated, and reharden when cooled. Exploiting these characteristics enables us to continue creating a diverse range of functional materials.

UEXC was launched with the use of this technology; we created the world's first polypropylene band for packag-



We extrude materials to create tangible shapes. Combining this technology with a wealth of ideas allows us to continue creating products that other companies cannot hope to imitate.



UEXC was actually the first to conceive of "PP band" or polypropylene band With their high strength and resistance to friction, our PP band for packaging greatly changed the status quo within the distribution industry.



Rotary dies conceived from revolutionary ideas. This enables the helix graoves for protecting and storing optical fibers to be controlled across several dozen kilometers with an accuracy level measured at less than one millimeter.



TWINCONE consists of sheets with cone-shaped protrusions sandwiched between two other sheets. Due to its light yet durable attribute, this product is used in all sorts of industries such as distribution, agriculture, and civil engineering.



Never compromising on lightness for improved fuel efficiency

Technology for reducing weight is becoming more and more vital for improving the mileage of automobiles. We are stringent in our demand for interior materials that are lighter and stronger. Take trunk floor panels and seat back panels for example. Using the lightest possible materials while maintaining strength contributes to improved fuel efficiency behind the scenes.

TWINCONETM (Automotive Interior Material)

TWINCONE is fitted with central sheets consisting of uniquely-shaped conical tips fused to the outer sheets, which makes it both strong and lightweight. Unlike conventional hollow-structured boards, its strength remains the same regardless of the direction the sheet faces. It is also equipped with excellent sound absorption properties, making it perfect for use as the luggage board in electric vehicles, as well as other interior components.



Helix grooves supporting data communications around the world

Optical communication networks are now indispensable for everyday life. "Slot" are added to the cables in order to set up an optical fiber network. Storing the optical fibers within helix grooves protects them from external pressure and shocks, enabling stable communications.



RASEN COMPOSE™ (Optical Fiber Cable Material)

We are extremely proud of the rate of adoption we have achieved as Japan's only manufacturer of "Slot" for fiber-optic cables. The levels of accuracy in the slot dimensions, the reverse pitch of the slot, and other components are extremely high, which makes the product highly acclaimed not only in Japan, but also overseas. Furthermore, the following can be customized in accordance with the application: the resins to be used for molding, the extrude or resulting shape, the quality of the core material, etc.



Supporting Japan's manufacturers through customizable eco-friendly boxes

Our reusable boxes are used to safely transport parts produced by manufacturers. In addition to protecting the contents from damage, reducing waste and costs is also a requirement. Equipped with a harmonica-like cross-sectional structure, our "plastic cardboard" is light and durable. It can be changed into various shapes to ensure that valuable contents are always protected.



DAMPLATETM (Plastic Cardboard)

This DAMPLATE plastic cardboard was first produced in 1971, and it remains as one of our bestsellers up to now. It is light, highly resistant to shock and chemicals, and has been treated to provide powerful resistance against water leaks. These characteristics are the reason it is used in a wide range of fields in accordance with diverse requirements, not only for material distribution, but also through to curing sheets used during furniture removals, temporary signboards, and ventilation material used in residential homes.

Spinning wisdom and drawing strength

With our spinning technology, resins are molten and extruded, and then drawn out into thin, yarn-like strands while being cooled. Combining this with our drawing technology that aligns the crystallized substances within the yarn to enhance strength, we produce synthetic fibers. We have continued to improve our spinning and drawing technology for more than half a century.

Our technology for spinning fibers with a sheath-core structure made from a combination of different resins was established in the 1980s, and contributed to the improved performance of disposable diapers. In 2000, we developed our original high-pressure steam drawing technology, which enabled us to achieve unprecedented levels of strength in olefin fibers, and support the improvement of rechargeable battery performance.

We will continue to spin wisdom from our pursuit of technology that has been cultivated through the manufacture of synthetic fibers, and we will keep on creating valuable products that are beneficial to society.



Core Technology



This heat-sealed, nonwoven fabric made from UC conjugate fibers created from two types of resin with different melting points does not use adhesives, and it is therefore widely used in paper diapers and other sanitary products, etc.



Stable, high ratios of drawing are achieved through high-pressure steam that regulates temperature. Trial production of the fiber revealed a crystal structure similar to that found in bamboo joints, which is evidence of high strength. This is how the high-strength SIMTEX polypropylene fiber was born.



SIMTEX Conjugate Fibers are reinforced self-bonding fibers. They continue to be used for a wide range of applications, including home appliance parts and daily commodities.

Dry sheets essential for growing babies

The majority of diapers, which are essential baby items, are made of synthetic fibers. The quality of diapers made in Japan is number one throughout the world, owing to their moisture-absorbing ability for keeping the baby dry and ability to protect the baby's delicate skin. Synthetic fibers are equipped with various functions that support the health and growth of babies.



UC FIBER (Conjugate Fibers)

Conjugate fibers with two different types of resin for the core and outer sheath have been made possible by our synthetic fiber manufacturing technology. Making use of the difference in the resins' melting points and forming nonwoven sheets for disposable diapers is a simple procedure; and by combining resins and the technology for the oil solution to be applied, it possible to incorporate a wide range of functions and properties such as hydrophilicity, water repellency, antimicrobial action, bulking performance, flame resisting, and elasticity.



Ultra-fine fibers for ensuring safe water

These filters are the ones used in air conditioners and vacuum cleaners. They are widely used not only in household appliances, but also in machines and devices for industrial use. Nonwoven fabrics for high-performance filters, which are made from ultra-fine fibers that are stronger, thinner and finer, are playing a major role in conserving the environment and ensuring safe water.



AIRYMOTM (Fine Denier Polyolefin Chopped Fibers)

The newly-developed AIRYMO is composed of self-bonding conjugated fibers made with olefin resin, which has different melting points for the sheath and the core, and is produced with our own spinning and drawing technology. It has a thickness of 0.2 decitex (fiber diameter of approximately 5.3 micrometers), which exceeds all limits available up until now. The tensile strength, pore size, and other elements for producing nonwoven fabrics have been improved, making it possible for the fibers to become thinner and lighter.



Better batteries for a sustainable energy-based society

The performance of rechargeable storage batteries is influenced by the performance of sheets known as separators, which prevent the electrodes from coming into contact contact with each other and causing a short circuit. Storage batteries are used to store the electricity generated by solar panels and to power various types of household appliances, and the separators contained within them help support sustainable energy societies.



SIMTEXTM (High-Strength Polypropylene Fibers)

We produce polypropylene (PP) fibers with an excellent crystal orientation through our company's own drawing process. Our PP fibers, which have inherently high resistance to chemicals, also feature unparalleled levels of strength, elasticity, and resistance to thermal shrinkage. They increase the capacity of batteries while eradicating the risk of the electrodes coming into contact with each other and creating a short circuit. They are highly acclaimed as fibers that are unequaled elsewhere.



Melding characteristics by coating

The surface of fiber-reinforced plastic (FRP), which is cured by heating, is coated in resin. This technology combines the coating with the FRP by heat treating FRP after it is positioned into the the resin layer. Instead of using dies, we came up with the idea of using resin layers to reduce pull-out resistance and greatly improve productivity.

FRP products created with this technology are strong, lightweight and



rust-free. They are now being used in a wide range of industries, such as the fishing, agricultural, and construction industries, instead of items made from bamboo, wood, metal, and other materials.

We create new value by combining materials with different characteristics through the use of an original idea. We will continue to accept all challenges in order to cater for the diverse needs of society.

Coating and Pultrusion

Core Technology



Through our own bonding technology, we have succeeded in creating the three-layered COMPOSE with the following structure: special resin + FRP layer + special resin. This durable and long-lasting material is used in a wide range of fields.



Up until now, it has been impossible to mold FRP materials into netting and other complex forms. Uncured COMPOSE is a breakthrough material whose form, such as baskets, becomes fixed after being heat-treat-

fields as a material that also flexibly responds to difficult requirements such as lightness, hardness, pliability, bending orientation, and surface smoothness.



Changing the future of the fishing and agriculture industries with a rust-resistant material

As the consumption of fish continues to increase worldwide, and attention moves across to the aquaculture industry, comprehensive aquaculture facilities that breed fish are expected to contribute to the sustainable use of marine resources. A material that is highly resistant to rust and corrosion even in seawater does not only support Japan's aquaculture industry, but also the future of the fishing industry.



COMPOSE[™] Pipe (For Fishing Support)

Lightweight, strong and rust-resistant COMPOSE FRP pipe boasts tenacious elasticity made possible by its three-layered structure bonded with special resins. It has optimized levels of workability, durability, and safety, especially when used for marine applications that run the risk of rust and corrosion. It is widely used not only in aquaculture pens, but also as support for seaweed farming, and for the rafts and sheleves used in oyster farming.

Lightweight and pliant poles that help support the aging agricultural industry

In tunnel cultivation, crops are enclosed in pole-supported vinyl arches. This is a commonly-used method for cultivating vegetables; however, its disadvantage lies in the necessity to erect and dismantle the tunnels depending on the growth stage of the crops. Poles that are light, easy to install, and easy to store when not in use play an important role in reducing the burden on aging agricultural workers.



DANPOLETM (Agricultural Tunnel Support Pole)

DANPOLE is a special multi-layer FRP pole that we developed. It is less than half the weight of a metal pole and has excellent resistance to corrosion. Having a cover that makes it safer to use, its usability which includes its ability to return to its original shape offer being bent, and other factors enable this product to achieve optimal performance at supporting agricultural tunnels. It has been fully endorsed by farmers over the course of many years.



Creating towns that can withstand disaster by providing full protection to optical fibers

Being able to determine the danger levels for bridges and levees before disasters strike is truly useful. And what makes this possible is sensing technology that uses optical fibers. Tension members designed to protect delicate optical fibers play a vital role in ensuring that the condition of structures are accurately determined.



COMPOSE™ Tension Member (Fiber-optic Sensor)

Boasting an overwhelming share of the market, our FRP tension members (structures subjected to tensile stress) are used to support easily-warped optical fibers within drop cables that bring optical fibers into households. Optimizing combinations of resin and fibers with the use of this FRP technology enables us to produce FRP-coated optical fibers for use in a wide range of sensing apparatus in alignment with the functions required.



Invisible to eyes, yet supporting the world of sophistication

Sol-gel process is generally known as a method for producing glass at low temperatures. It is a synthesis method, reaction of a solution of metal alkoxide creating particles (sol) that are too small to even be seen under a microscope. These particles are then joined together to form a jelly-like substance (gel).

During mid-1980s, while researching materials using this technology, we discovered that silica microparticles that are high precision, uniform in size can be obtained. Moreover, as we further our research, we established a method that is capable of producing these fine particles at 0.1µm pitch in size.

We found that they were the perfect candidate to be applied as liquidcrystal display (LCD) spacers. Since the dawn of the digital age in the 1990s until today, we can proudly claimed that HIPRESICA has taken No. 1 share of worldwide spacer market.



Core Technology



HIPRESICA, when modified by coating the surface with resin, is known as "Anchor Particles". While applied to heat, the resin coating will melt and fix the particles at desired places. This is a revolutionary technology. It allows particles to be fixed in place without changes even if other materials drip onto







Hollow particles form a layer of air with a low dielec tric constant when mixed with resin, which suppresses transmission loss in high-frequency signals. These are expected to be used for communication equipment related materials that support high-speed and high-capacity.

Helping video technology evolve through particles aligned at the micro level

Fine spacer particles that accurately guarantee a gap, just a few microns in size, which is necessary for direction change of liquid crystal molecules in screens. Uniform gap is also the key factor for the high-definition LCD panels in smart-phones, televisions and other such appliances. It is these particles that enable us to enjoy quality videos at any time.



HIPRESICA™ TS (Precision Silica Particles for Gap Spacer)

HIPRESICA was born from our research into the sol-gel process. They are mono-dispersed silica microparticle that we introduced to the market as LCD spacers. These spherical particles contain very limited amount of uneven-sized particles and therefore, have a sharp size distribution curve. With extremely high purity, HIPRESICA contain almost no impurities, which contributes the reason why HIPRESICA holds the top share in the world market.



Controlling light to ensure comfort and privacy

There are now windows that can instantly block light even without curtains. Smart film is being installed more and more commonly in offices, automobiles and other locations. It is essential to apply spacers that guarantee a space between the layers to prevent the light from being scattered. The simple idea of tinting the spacers in black has helped improve the performance of smart glasses.



HIPRESICATM BK (Black Silica Microparticles)

HIPRESICA is mono-dispersed, spherical silica microparticles. They are originally made as translucent. However, the newly-developed BK is created with our very own production method, which allows the silica particles to contain black pigments and gives HIPRESICA BK a strong characteristic as light blocking effect. It is excellent for applications that require the suppression of light scattering.



A high level of purity that researchers can rely on

High-performance liquid chromatography (HPLC) is used in various fields of research, including medicine, environmental studies, and biochemistry. It is a method of separating and analyzing the substances contained in sample liquids by using silica microparticles as a sieve. High-purity silica particles are contributing to growth in the fields of science and technology.



HIPRESICATM FQ (High-purity Silica Microparticles)

HIPRESICA FQ consists of extremely pure, spherical silica particles of uniform size. With the characteristics of high levels of thermal stability and modifiable surface, silica microparticles can undergo surface treatment to enhance ability of absorption. They are used as a filler not only for HPLC columns, but also for semiconductor-sealing materials and high-functioning adhesives.



Combining two different materials to create hybrid value



At the beginning of the 2000s, we were the first company in the world to succeed in mass-producing materials for flexible printed circuit boards with the use of this technology. By further developing the applicability of the process in recent years, we have been able to establish a general-purpose technology for laminating different types of metals and organic materials.

We will continue to provide new value to society by developing unique materials from combinations of different materials.



Core Technology



This is the world's first laminator for manufacturing materials for flexible printed circuit boards. The experience engineers have struggled to acquire in the field of mass production has proved useful in establishing a technology capable of freely laminating various materials.



and thermoplastic resins has enabled the roll-to-roll-

production of FRTP sheets with fibers fully permeated

with resin.



Aluminum has been laminated as heat-dissipating plates into a LED light bulb, for which heat dissipation is imperative. LED chips can be mounted directly as the material used for the heat-dissipating plates is thin, lightweight, and able to be converted to solid form.



Laminates that do not easily peel off for preventing vehicle collisions

Precrash systems are now being mounted on vehicles as standard equipment. Combining copper foil, which easily peels off when trying to reduce transmission loss, and an insulating film suited to high-speed communications has always been a challenge when making printed circuit boards for ultra high-precision sensors that instantly detect hazardous objects. This problem has been solved with our laminating technology, which supports the future of automated driving.



EXSYLAM[™] L (High–Frequency Circuit Board Material)

EXSYLAM L is a flexible printed circuit board material combining copper foil with liquid crystal polymer (LCP) film, which has a low dielectric constant and dielectric dissipation. It has excellent high-frequency properties, making it suitable for high-frequency circuit boards and millimeter-wave radar antennas which require higher communication speeds. It is attracting attention for realizing future automated driving and fifth-generation mobile communications system.



Making electronic equipment more compact with durability and accuracy

High-performance printed circuit boards are indispensable components of smartphones and other such electronic equipment. They are required to provide accuracy levels down to a few dozen microns. Circuit boards that do not use any adhesives to combine an insulator and copper foil, which acts as an electronic circuit, make it possible to produce compact, high-performance precision equipment.



UPISELTM N (Copper Clad Laminate)

UPISEL N is a flexible copper-clad laminate which is the product of combining UPILEX polyimide film and copper foil without the use of adhesives. It was created with our own method in which different materials are sandwiched between metal belts and laminated by heating them at the same high temperature. This material has excellent resistance to soldering heat and chemicals, and it is highly acclaimed as a material for use on electronic circuit boards in mobile devices and other such equipment.



Heating with the use of unmeltable material

Heaters employing the resistance heating method to generate heat by passing electricity through metal are used in a wide range of scenarios. For example, recent car heater systems include not only air conditioners, but also functions to warm the seats. The existence of a material that does not melt would enable car users to feel comfortably warm even in winter.



UPISELTM C (Polyimide Heater Material)

Upisel C is a laminate made from polyimide film and stainless-steel foil. As it is thin, lightweight, bendable, and made without using adhesives, it is highly resistant to heat and silicon-free. In addition to being highly acclaimed for use in industrial heaters, it is also expected to be used for vehicle-mounted heaters and the liter.

Unique = [Sincerity

Being unique also requires sincerity.

Materials that did not exist anywhere in the world up until now were not conceived with simple ideas. New products cannot be created without innovation skills that look far into the future, meticulous research to provide support, and repeated trial-and-error processes. All of us at UEXC are instilled with passion and tenacity. Sometimes we concentrate silently alone; other times we deliberate over particulars with everybody else. And every day, we sincerely pursue creativity as we continue to grow.



People of UEXC

person



[# Male] **17.19** *years* [# Female] **15.03** *years*





Researchers

The willingness to accept every challenge and our intimate communications ensure that each and every one of us is involved in creating the next step.

Every one of our researchers works hard on different topics on a daily basis in order to develop ideal materials. While boldly continuing to accept every challenge through flexible thinking, they openly exchange opinions and ideas with other employees of all ranks. It is this open corporate culture that enables us to create unique functional materials.



Research Laboratories Our research laboratories work on everything from basic research through to product development in order to cater to a wide range of needs. We also operate a research laboratory specializing in state-of-the-art fibers, in addition to our central research laboratory which acts as our flagship.



Central Research Laboratory

Located at the core of UEXC's research and development, and staffed by a diverse workforce, this laboratory carries out unique research straddling all industrial fields.



A dvanced Fiber Research Laboratory

This research laboratory mainly specializes in research into state-ofthe-art fibers. It is adjacent to our Fukushima Factory, which is our main factory for producing materials for synthetic fibers and optical communication cables.

Engineers

Acting without delay. Tenacious until convinced. Turning everyday struggles into tangible forms.

Creating products that do not yet exist and facing barriers that nobody thought existed—Our engineers face these daunting barriers on a daily basis, yet still continue to design and improve our production lines and turn ideas into tangible forms through their ability to adapt and their innovative sense of challenge which enable them to act speedily.





Factories

Our factories are equipped with original facilities concentrating our unique technologies. Our integrated system covering everything from research through to production and distribution enables us to speedily and flexibly respond to market requirements.



Gifu Factory

As the heart of UEXC, our Gifu Factory performs all aspects of management, from production through to shipping. It also boasts the largest estate in the city.



Fukushima Factory

Our Fukushima Factory is located in Koriyama City, Fukushima. It is a manufacturing base specializing in the production of materials for synthetic fibers and optical communication cables with R&D functions of state-of-the-art fibers.



UBE EXSYMO ADVANCED MATERIALS (WUXI) CO.,LTD.

Located in Wuxi, China, this factory is in charge of producing materials for optical communication cables for the rapidly-growing Chinese and Southeast Asian markets.







Sales & Administrative Staff

The desire to act as a bridge between technology and society.

No matter how advanced the technology is, its value is diminished if it is not used for the benefit of society. Our sales and administrative staff members act as a bridge to ensure the social value of our technology by addressing customer problems and needs with sincerity, and proposing optimal solutions.

Offices

- Tokyo Head Office
- Nagoya Office
- Ube Extension Office
- Osaka Branch
- Fukuoka Office
- Fukuoka Office (Ariake Satellite Office)



Company Name : UBE EXSYMO CO.,LTD.

Date of Establishment : February 22, 1966

Capital : JPY 2.4925 billion

President & CEO : Genji Koga

Head Office :

Sumitomo Seimei Nihonbashi Tomizawacho Building, 9-19 Nihonbashi Tomizawa-cho, Chuo-ku, Tokyo 103–0006 Tel/03-6667-2411 Fax/03-6667-2433

History :

- Feb 1966 Ube-Nitto Kasei Co., Ltd. was established
- Apr **1966** Sales started(Polypropylene fibers, DANLINE™, etc.)
- Feb 1967 Central Research Laboratory was established
- Mar **1971** Production of DAMPLATE[™] started at the Gifu Factory
- Jan **1971** Production of FRP products started at the Gifu Factory
- Apr **1980** Production of SUNNY COAT[™] started at the Gifu Factory
- Jul **1985** Production of RASEN COMPOSE™ and COMPOSE™ Tension Members started at the Gifu Factory
- Jun **1987** Production of UC FIBER started at the Fukushima Factory
- Jan 1987 Production of COMPOSE[™] Square Reinforcers started at the Gifu Factory
- Aug **1994** Stocks registered with the Japan Securities Dealers Association
- Jul **1995** Production of HIPRESICA[™] started at the Gifu Factory
- Sep 1996 Stocks listed on the second section of the Tokyo Stock Exchange
- Jan **1997** Production of RASEN COMPOSE[™] started at the Fukushima Factory
- Aug **2000** Production of SIMTEX[™] started at the Fukushima Factory
- Jul **2001** Production of UPISE[™]L N started at the Gifu Factory
- Apr 2002 Ube-Nitto Kasei (Wuxi) Co., Ltd. was established in Wuxi City, China (100% funded by UEXC)
- Jan 2003 Share-for-share exchange with Ube Industries set the company as a wholly-owned subsidiary company (stocks delisted from the Tokyo Stock Exchange as a result)
- Jun **2007** Production of SIMLOCK[™] started at the Fukushima Factory
- Apr **2008** Production of TWINCONE[™] started at the Gifu Factory
- Dec **2008** Production of high-functioning tubes started at the Gifu Factory
- Jun **2013** Production of filters started at the Gifu Factory
- Jan 2013 Company name changed to UBE EXSYMO CO.,LTD.
- Dec 2015 Advanced Fiber Research Laboratory was established
- Jan 2016 Production of EXSYLAM[™] L started at the Gifu Factory
- Mar **2016** Sales of UPISEL[™] C started
- Jan 2017 Production of identifying fibers started at the Gifu Factory
- Apr 2021 Production of AIRYMO started at the Fukushima Factory



https://www.ube-exsymo.co.jp/ Please visit our website for more details.

Unique =

[Breakthroughs]

Continuing to be unique leads to breakthroughs.

We approach head on aspects that common sense deemed impossible up until now. We realize that what is up-to-date yesterday could become out-of-date tomorrow. It is because of this that UEXC is determined to continue being unique constantly improving technology and never being satisfied with what we have; nurturing conceptual skills that can beat constantly-changing perceptions of common sense; and being sincerely and earnestly involved in product creation. We will continue to weaponize our being "unique" to forge a path into the future. Being unique leads to something special. Constantly burnishing our technology and ways of thinking, while facing the requirements of the times and customer problems head on, has enabled us to produce a wide range of products that were unthinkable up until now. Although the markets we are involved in are small, the results gained from catering to each of these markets can later be expanded into a broad range of different fields. This product map is what guides us toward "specialization" and "expansion". And so that we can create a much bigger map, we intend to continue and stay "unique".

PRODUCT MAP OF UEXC

UBE EXSYMO CO.,LTD. Product Catalog





Electronic **Materials** Department

HIPRESICA TS (Precision Particles for Gap Spacer) Spherical silica particles with very narrow particle size distribution and high levels of purity that are used as gap spacers, etc., in LCD panels.

Sol-gel Processing



HIPRESICA FO (High-purity Silica Microparticles) Extremely pure, spherical silica particles of equal

size. With high levels of thermal stability, it is mainly used as a filler for semiconductor-sealing materials and high-functioning adhesives.



EXSYLAM-P (FRTP)

A FRTP consisting of carbon fibers and glass fibers permeated with thermoplastic resins. It can be supplied as prepreg and UD material, and it is lightweight, durable and has superior levels of designability (the photographs are for reference purposes only)



EXSYLAM-L (High-Frequency PCB Antenna Material)

A flexible copper clad laminate with a liquid crystal polymer (LCP) film base. It has excellent high-frequency properties, making it suitable for high-frequency circuit boards, antennas and millimeter-wave radar antennas

Roll-to-Roll Lamination



UPISEL-N (FPC Material)

A non-adhesive type of flexible copper clad laminate with a polyimide film base. It is highly acclaimed as a material for use on electronic components in mobile devices.



UPISEL-C

(Polyimide Heater) A non-adhesive type laminated circuit board made of polyimide and stainless steel. With high levels of heat-resistance, reliability and design freedom, it is highly acclaimed for use in industrial heaters.



(Heat-dissipating Plate Material) A non-adhesive type of ultra-thin lightweight heat-dissipating plate made of polyimide and aluminum High-levels of heat dissipation and the capability of being processed three-dimensionally make it suitable

UPISEL-H for power modules and LEDs.

Engineering **Materials** & Products



Identifying Fibers (Optical Fiber Identifiers)

Bundling tape for identification purposes that bundles the optical fibers together within the optic cables. These are stored at high density, and contribute to creating fiber-optic networks with high levels of workability.

Polypropylene Fibers

(Staple fibers for carpets and filters)

PP fibers. They have superior resistance to

chemicals, and are used in a wide range

of fields, including carpets for exhibition

halls, as oil-absorption materials, as

material used on the interior of

automobiles, and in filters.

Department

Fiber





Spiral COMPOSE (Fiber-optic Cable Material)

The material known as "slots" on fiber-optic cable that enables the optical fibers to be stored and protected at high density in spiraling grooves.

COMPOSE Tension Member (FRP Rod) Tension members for fiber–optic cables that are widely used for subscriber lead-in cables and indoor cables.

(Construction Scaffolding & **Reinforcement Material** Scaffolding material that is lightweight durable and has superior levels of elec insulation, used on railways and electric power construction sites. Also used as a simple ement material for handling loads.



SIMTEX

(Rechargeable Battery Material) PP/PE conjugated fibers using our unique drawing process. They have inherently high levels of strength, elasticity, resistance to thermal shrinkage and chemicals, and they have been highly acclaimed as a material for use in recharaeable batteries



UC Fibers (Conjugate Fibers for Sanitary Materials)

PP/PE Conjugated Fibers Provides various functions, such as hydrophilicity, water repellency (oil repellency), antimicrobial accordance with usage. Used in paper diapers, sanitary products and filters, etc.

action, and flame retardancy, in

Spinning and Drawing



AIRYMO (Ultra-fine Olefin Conjugate Fibers)

Ultra-fine PP/PE conjugated fibers 0.2dtex thick 5.3µm diameter), the likes of which cannot be ound anywhere else in the world. They are perfectly suited for use in high-function masks and high-function filters.



(Concrete Repair Material) Mesh sheets using high-strength olefin conjugate filament. Used on bridges as sheets for strengthening and repairing concrete structures.



SIMTEX Conjugate Fibers (Thermoplastic Composite Molding Material) Molding sheet using SIMTEX in its original form, used in electrical equipment housings and suitcases due to a level of designability made possible by exploiting a fiber weave with superior shock-resistance



COMPOSE

(Agricultural Support Pole)

It is used as support poles for barriers and

electric fences to protect crops from being eaten

by deer, wild boars and other wild animals, and

poles to support ornamental flowers and plants

as well as yams and bean crops.

DANPOLE

(Agricultural Tunnel Support Pole)

Small-diameter FRP rod pipes with the surface coated with a special resin, used for supporting agricultural tunnel houses. Characterized by high levels of restorability that enable it to return to its original shape when bent.

Performance Plastics Department



Coating and Pultrusion



COMPOSE (Aquaculture Supports)

FRP pipe that is used in the field of aquaculture in such areas as supports for seaweed farming, oyster farming rafts, aquaculture pen frames, and as supports for mooring points.

COMPOSE



Sunny Coat (Heat-Retentive Film)

A double-layer hollow film with the center hollowed out. Used for heat retention in agricultural hot-houses and for window insulation purposes. Contributes to cost-saving for heating and cooling.



SIMTEX Mesh

Extrusion Molding



(Four-layer Hollow Board)

Four-layer hollow boards made of PP. They are lightweight and rigid with superior air and water penetrability functions, and they are used in automobile interiors, as shelves, as the core material for tatami mats, and as civil engineering and construction materials, etc





DANPLATE Soft (Shock-absorbing Film)

A double-layer hollow film with the hollowed-out layer facilitating heat-retention and shock-resistance effects. It is used as a packaging material for exports, as cold-retention bags for the fisheries industry, and for curtains on freezer trucks



DANPLATE (Plastic Cardboard)

Hollow boards made of PP and extruded in single sheets. They are light and have superior levels of shock resistance and chemical resistance, as well as providing powerful resistance against water leaks, and they are widely used in cargo containers, large containers, and as curing materials, etc.