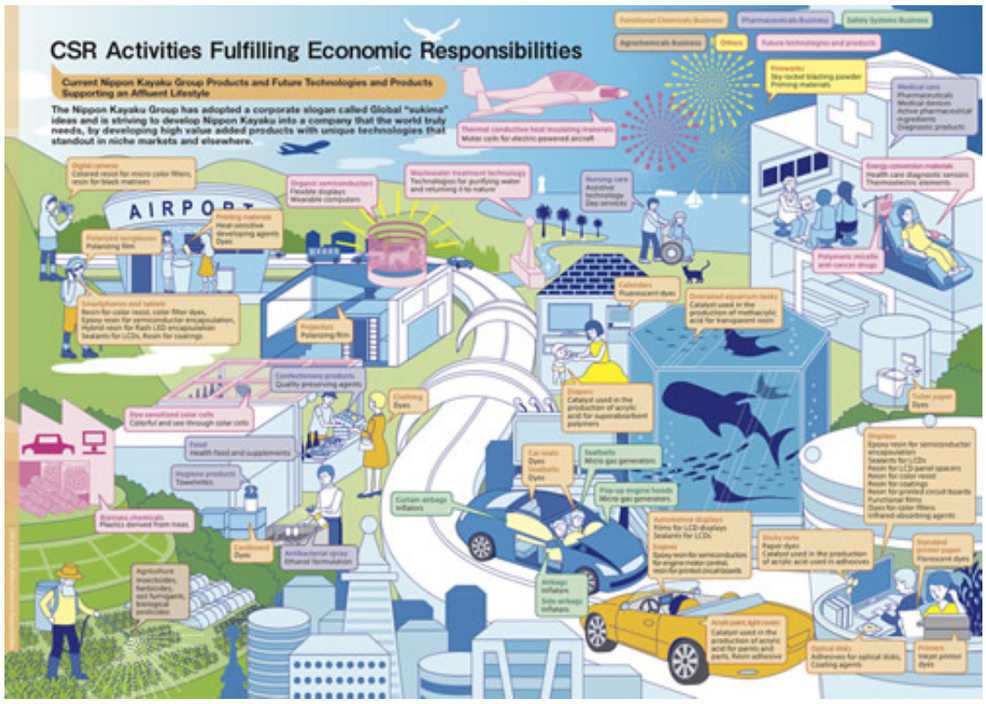
Global "sukima" ideas
NIPPON KAYAKU

CSR Activities Fulfilling Economic Responsibilities

The Nippon Kayaku Group adopted a corporate slogan called Global "sukima" ideas. We are striving to develop Nippon Kayaku into a company that the world truly needs, by accumulating unique technologies that stand out in niche markets and elsewhere. Here, we introduce four of our core businesses to show readers some of the ways in which our products are used on a daily basis.

Current Nippon Kayaku Group Products and Future Technologies and Products Supporting an Affluent Lifestyle

The Nippon Kayaku Group has adopted a corporate slogan called Global "sukima" ideas and is striving to develop Nippon Kayaku into a company that the world truly needs, by developing high value added products with unique technologies that standout in niche markets and elsewhere.



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The Nippon Kayaku Group's Businesses

This section will take a closer look at the 4 core businesses of the Nippon Kayaku Group as well as products that it developed with unique technologies that contribute to the betterment of society.

Functional Chemicals Business

Development of motor coils for electric-powered aircraft using heat insulating material with thermal conductivity

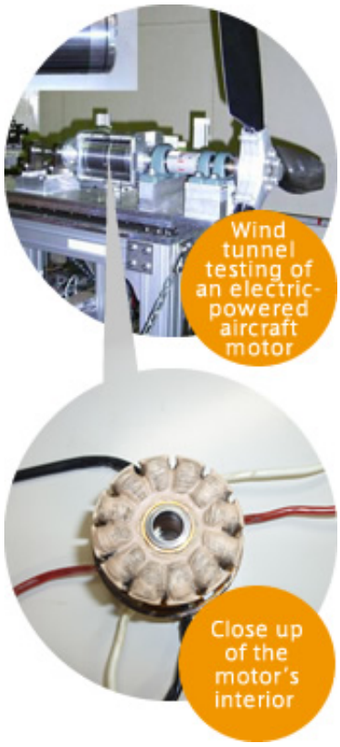
The Japan Aerospace Exploration Agency (JAXA) has researched and developed electric-powered aircraft as one prominent aerospace technology that can change the future of flight. The key to this technology is a compact, high efficiency motor. However, with conventional electric motors it was difficult to prevent the coil from burning due the high temperature needed to achieve maximum power for takeoff. A host of solutions were devised, which included increasing the size of the motor the motor system to limit the maximum power needed and using a water-cooled system, but these methods resulted in the exact opposite of downsizing. Instead, a coating material that does not cause heat damage on the motor coil was required to achieve both the compact design and high-efficiency needed.

Nippon Kayaku has used special reactive polyamide resins to develop highly thermal conductive heat insulating material with advanced heat conductivity and adhesive properties that can be used up to 250 degrees Celsius.

Nippon Kayaku and JAXA began joint research in fiscal 2012. Recently this research yielded the successful development of a motor coil that can operate at maximum power for twice the amount of time of conventional coils and achieves a 1% improvement in maximum efficiency.

This technology will help us realize a lighter and more compact motor system with greater maximum power than conventional systems. These advancements will allow for the system to be used not only in aircraft, but also in other applications as well, such as large vehicle and electronic industrial equipment that will require greater power than now.

Functional Chemicals Business



Pharmaceuticals Business

Specialty, Biosimilar & Generic Plus IVR Pharma

Nippon Kayaku was among the first to commercialize biosimilars that play an important role in the treatment of cancer and rheumatoid arthritis after focusing all of its efforts on the field. These biosimilars are helping patients and their families as well as healthcare practitioners.

By providing an extensive lineup of biosimilars, Nippon Kayaku is helping to ensure that all of society can have equal access to sound, high quality medical treatment options anytime and anywhere.

In 2010, Nippon Kayaku entered the Interventional Radiology (IVR)* field as the third pillar of its Pharmaceuticals Business. Moving forward, we are focusing on further expanding our lineup of embolic materials tailored to the needs of target organs as well as the condition of diseases and patients. In this manner, Nippon Kayaku is making contributions to society as a whole by delivering embolic products that reduce the physical burden of patients and particularly those battling cancer.

Nippon Kayaku's informative website for healthcare practitioners called MINK Web

Pharmaceuticals Business

* IVR: Also known as intravascular surgery or endovascular surgery, IVR is a method of treating illness with a narrow catheter or needle inserted inside the body that is manipulated while monitoring X-ray, ultrasound, or CT images.

Safety Systems Business

Recognized as Safety Components Manufacturer by NCAP

Public automobile crash tests are being conducted around the world to respond to consumer demands for automobiles that are safer for occupants in the event of a collision. These crash tests are known as the New Car Assessment Program (NCAP) or the Japan New Car Assessment Program (JNCAP) in Japan. These crash tests now include pedestrian protection performance, in addition to occupant safety and braking performance. NCAP performs safety performance testing for mass produced vehicles and publishes the results to enable consumers to select safe automobiles in an effort to popularize safe vehicles. This testing has been performed in the United States since 1979 as UNCAP and recently was launched in December 2011 as ASEAN NCAP in ASEAN countries. In addition, similar testing is also being conducted in Europe, Australia, China and South Korea. A variety of elements are needed to ensure occupant safety in the event of an automobile collision, and airbags and seat belts play a particularly important role.

Given this environment, Nippon Kayaku harnesses its long-standing explosives technologies todevelop, manufacture and market inflators for airbags, micro gas generators for seat-belt pretensioners, and pop up engine hood devices to protect pedestrians from head injuries, helping to ensure the safety of automobile occupants around the world.


Air bags inflated using explosives technology

Safety Systems Business

Agrochemicals Business

Protecting Rice with Unique Pesticide Sukumi Hunter

Apple snails from South America have spread across Japan, especially Western Japan, where they have caused extensive damage to wetland rice seedlings.

The Agrochemicals Business used its formulation technologies to successfully transform Thiocyclam, an agrochemical intermediate used to exterminate other insects, into gradual release granules that have residual efficacy. This new formulation does not completely exterminate apple snails, but rather stably prevents damage to rice paddies by reducing apple snail activity during the period of efficacy and reducing their ability to masticate.

Apple snail

Apple snails eat wetland rice plants when the seedlings are soft, but once they grow larger and harden, the apple snails go after other vegetation like grasses. This means that the sustained efficacy of the pesticide during the period until the seedlings harden will prevent damage to seedlings while also help cut back on invasive weeds that occur later in the growing cycle.

In this manner, Nippon Kayaku Group technologies are alive and well in the materials that help produce food and in pesticides that reduce producer work load and protect agricultural produce from pesticides and weeds.

Agrochemicals Business

Research and Development

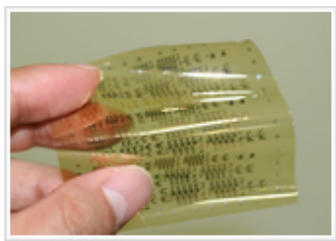
Researching the Needs of Tomorrow: R&D for Organic Semiconductor Materials

Electronics have drastically improved living standards since the 20th century. Today, electronics occupy an indispensable presence in many of the products we use every day, including computers, smartphones and medical equipment. One of the core components of these electronics are inorganic semiconductors.

The world which uses an inorganic semiconductor

Nippon Kayaku is researching and developing organic semiconductors as an alternative to inorganic semiconductors. Organic semiconductors can be used in a host of different products (products that bring our live new and greater convenience) because they make it possible to make electronics softer. In addition, organic semiconductors can be printed, making the semiconductor manufacturing process more environmentally friendly and use less energy. Organic semiconductor materials are garnering much attention from academia and industry alike as a material that represents the key to the future of electronics.

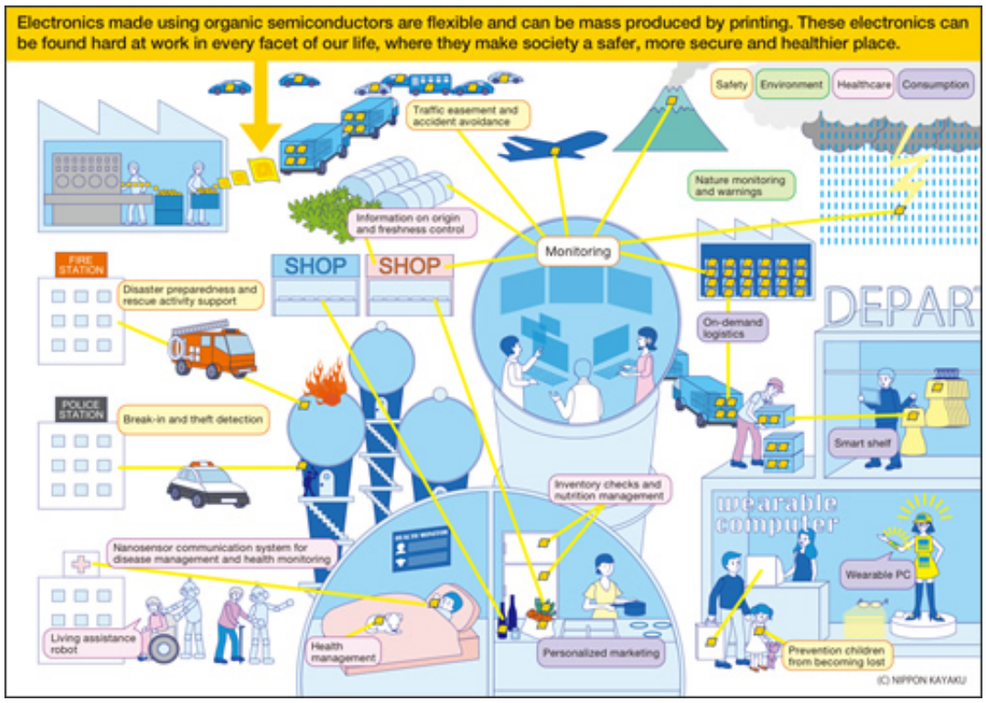
Nippon Kayaku's organic semiconductor materials boast among the best performance in the world. We are also working closely with other leading research institutions in Japan and abroad to accelerate the commercialization of these technologies through our involvement in NEDO's consigned research project, the Japan Advanced Printed Electronics Technology Research Association (JAPERA).



The world which uses an organic semiconductor

Going forward, Nippon Kayaku will seek to research new themes that capture the needs of tomorrow and to systematically develop businesses in the segment in order to make sustainable contributions to society.

Learn more about our research laboratories



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