

Exploring to Provide Value to Society

In fiscal year 2016, we took on various challenges to develop innovative solutions beyond the boundaries of chemistry and deliver "wonders" that exceed the expectations of customers and society. The following showcases the significant advances made in fiscal year 2016 to "Improve Quality of Life (QOL)" and "Realize Sustainable Environment," which are values to be fulfilled as set forth in the 10-year Strategy.



For detailed information on the following, refer to [Hitachi Chemical's website](#) ▶ [About Hitachi Chemical](#) ▶ [News release](#).

Jun. 27, 2016 Hitachi Chemical Co., Ltd. and MD Anderson enter into strategic alliance

Oct. 11, 2016 Establishing a New Contract Development and Manufacturing Facility for Regenerative Medicine Cell Therapy

Mar. 17, 2017 Announcement on Membership Interest Acquisition of PCT, LLC, a Caladrius Company (USA)



Aiming to improve patients' quality of life (QOL)

—Contributing to cutting-edge medical services

In April 2016, Hitachi Chemical entered into a four-year strategic alliance with The University of Texas MD Anderson Cancer Center. This alliance is expected to enable us to build a competitive advantage in molecular diagnosis technology, based on the Center's outstanding track record in cancer treatment, research and the application of the micro-fabrication technology that Hitachi Chemical has been evolved in, with the electronic materials field. Furthermore, in March 2016, Hitachi Chemical partnered with [PCT](#), which is engaged in the business of contracted cell manufacturing for regenerative medicine in the U.S., and in May 2017, increased its equity interest in PCT to 100% and thus turned it into a consolidated subsidiary. As this arrangement enables us to absorb PCT's brand power, production sites, sales networks, etc., we plan to expand the business of contracted cell manufacturing for regenerative medicine on a global scale, including Europe and the U.S. In Japan, we have decided to invest approximately ¥2 billion into the [construction of a new contract development and manufacturing facility for regenerative medicine cells, etc. in Yokohama City, Kanagawa Prefecture](#), with the plan to start operating the facility on a full scale in FY2018. Hitachi Chemical Group's expertise in manufacturing management and quality control gained in its Life Sciences business and manufacturing technologies in clean rooms acquired through its semiconductor materials business will be combined with PCT's knowledge to establish technologies to manufacture products with superior quality and high safety standards in regenerative medicine, a leading-edge medical field, and thereby contribute to better the QOL of patients.

Construction of a new contract development and manufacturing facility for regenerative medicine cells, etc., in Yokohama City, Kanagawa Prefecture

The new facility will be established at a site near Haneda Airport (Tokyo International Airport), allowing manufactured cells to be transported to anywhere in Japan and even overseas within 24 hours. The facility will have equipment capable of manufacturing medicine ranging from investigational new medicine to pharmaceutical medicine and will be able to meet a wide range of requests from customers including pharmaceutical companies and venture firms developing regenerative products and other pharmaceutical products. The facility is due to start operating on a full scale in April 2018.



This page shows some of the major initiatives carried out during fiscal year 2016. For other initiatives, refer to [P.11-12](#). For detailed information, refer to the News release section of Hitachi Chemical's website.

PCT

PCT Cell Therapy Services, LLC (formerly PCT, LLC, a Caladrius Company) PCT has technologies and advanced business operation capabilities relating to the development of manufacturing processes, manufacturing and testing of regenerative medicine cells, etc.





Aiming to create new and innovative value

—Open Innovation: A new approach to customers

We have been promoting Open Innovation in an effort to promptly launch groundbreaking new products and businesses that exceed the expectations of our customers. Our efforts include the pursuit of synergy between the state-of-the-art technologies of third-parties with Hitachi Chemical's fundamental technologies through joint research and development as well as technology alliances with outside research institutes such as the government, universities and joint ventures. New Open Innovation projects include an [Open Laboratory for Semiconductor Packaging Materials](#) for the research and development of next-generation semiconductor packaging and processes, as part of our unique initiative to accelerate to "collaborative creation" with our customers; and the establishment of the [Innovation Center](#), the focus of which is to seek out new innovation themes for our customers based on our proprietary technology.



For the realization of a better sustainable environment

—Accelerating the development and commercialization of products based on demands for environmental soundness in Europe

In November 2016, Hitachi Chemical acquired a 51% equity stake in [FIAMM Energy Technology S.p.A.](#), and took over the automotive and industrial lead-acid battery business of FIAMM S.p.A. in Italy. Particularly, in regards to automotive lead-acid batteries, technologies for lead-acid batteries for vehicles with an Idling Stop System (ISS) that have been accumulated at Hitachi Chemical will be deployed at FIAMM Energy Technology S.p.A. to enhance its product appeal and expand market share in Europe and other major markets. Furthermore, in July 2017, Hitachi Chemical acquired 100% equity interest in [ISOLITE GmbH](#), with deployment, manufacturing and sales bases in Germany. The synergy generated by ISOLITE and Hitachi Chemical's thermal insulation technology will accelerate the development of insulation parts that meet the market needs of fuel efficiency and environmental soundness.



For detailed information on the following, refer to [Hitachi Chemical's website](#) ▶ [About Hitachi Chemical](#) ▶ [News release](#).

Jan. 12, 2017 Relocating and Upgrading the Open Laboratory that Promotes Open Innovation for Semiconductor Packaging Materials and Processes

Jan. 27, 2017 Opening of the "Innovation Center" A place to identify new themes and approaches to drive innovation with partners

Open Laboratory for Semiconductor Packaging Materials

The Open Laboratory was established ahead of other chemical manufacturers in Tsukuba, Ibaraki Prefecture in 2014. Among other things, Open Laboratory aimed to promote Open Innovation in semiconductor packaging materials and processes through collaboration with customers, equipment manufacturers and materials manufacturers. Customers from more than 400 companies visited the Open Laboratory until the end of December 2016. Going forward, the Open Laboratory will be relocated to Kawasaki City (Shin-Kawasaki area), Kanagawa Prefecture, which will be accessible from within Japan and from overseas, and it is expected to become almost three times larger than the current laboratory, with operations scheduled to commence in August 2018.

Innovation Center

The Innovation Center opened in Chiyoda-ku, Tokyo in January 2017. It welcomes not just direct customers but all stakeholders, including device manufacturers, materials manufacturers, universities and industry peers, and pushes beyond Hitachi Chemical's current business areas to identify new themes that can lead to new business opportunities.



For detailed information on the following, refer to [Hitachi Chemical's website](#) ▶ [About Hitachi Chemical](#) ▶ [News release](#).

Nov. 28, 2016 Notice Regarding the Share Acquisition of FIAMM Energy Technology S.p.A. in Italy

Apr. 27, 2017 Notice Regarding the Share Acquisition of ISOLITE GmbH, a Thermal Insulation Manufacturer in Germany

FIAMM Energy Technology S.p.A.

FIAMM Energy Technology is a company that operates an automotive and industrial lead-acid battery business worldwide (excluding China businesses), and has a high market share especially in Europe.

Please refer to [P.32](#) for details on the company.

ISOLITE GmbH

ISOLITE GmbH is a company engaged in thermal insulation parts for automobiles, aircraft and other industrial applications, with development, manufacturing and sales bases in Germany. Please refer to [P.32](#) for details on ISOLITE GmbH.