

Create & Lead



LG Chem Research Park



LG Chem Research Park / 104-1 Munji-dong, Yuseong-gu, Daejeon

TEL : 82-42-866-5944 FAX : 82-42-863-2054

<http://www.rnd.lgchem.co.kr>

[OEWR1] can understand why you pluralized "talent" as "talents", but you don't need to do so. "Talent" also refers to a group of talented people. Look at definition 5 of "talent" at the on-line Merriam Webster Dictionary at the following link: <http://www.m-w.com/dictionary/talent>

[OEWR2] wonder if "science" and "town" should each be capitalized. If the town is formally called "Daedeok Science Town", then they should be capitalized. If this is not a formal name, then I would put "the" before "Daedeok science town".

Contents

- 02 President's Message
- 04 About LG Chem Research Park
- 05 Vision & Strategy
- 06 People & Organizational Culture
- 08 Major Research Accomplishments
- 10 Facilities & Systems
- Research Fields
- 12 Corporate R&D
- 14 Information & Electronic Materials R&D
- 18 Chemicals& Polymers R&D
- 22 Industrial Materials R&D
- 24 History

Create & Lead



The Future is Here, Today · Technology Advancement Begins. · New Talents Are Born. · LG Chem is at the Cutting Edge of Change

LG Chem Research Park, becoming a world-class research center



In the knowledge revolution of the 21st century, R&D and innovation have become key to value creation even in industry. Obtaining core technologies through research and development is essential to the company's very survival and expansion. Since LG Chem Research Park's establishment in 1979, LG Chem has become globally competitive in petrochemical and industrial materials by developing innovative new products, catalysts, and processes. In the middle of the 1990's, information and electronic materials were designated as a strategic R&D area, and the subsequent R&D efforts have resulted in the development of the world's highest quality Li-ion battery, TFT-LCD polarizer, and core OLED materials. We have developed core materials for several high technology businesses and exported

new material technologies, contributing significantly to the national competitiveness and economic development of Korea.

LG Chem Research Park has established itself as the most successful private research center in Korea. However, as the market continues to globalize, competition is becoming more heated and technical barriers are more challenging to break through. Acquisition of core technology through applied research is insufficient to overcome these new challenges; in order to become a world leader, basic research must be conducted in addition to applied research. Corporate R&D must yield results and ultimately lead to new business development. LG Chem Research Park focuses on both basic and applied research. I expect to transform LG Chem Research Park

into a world-class research center that develops new technologies through the acquisition and integration of core technologies. The essential step toward this goal is the hiring and training of the best and brightest people. LG Chem Research Park is creating a dynamic and creative research culture where each individual can fully develop his or her talents. Our exceptional employees are permitted to focus on research, and our research park affords numerous learning opportunities and incentives. There are several "research informals" where creative and unique ideas can come together to create new products. Top universities from around the globe are invited to the Tech Fair each year to acquire world-class technological capabilities. LG Chem has established a global research network through

ties to several R&D centers in the US, Japan, and Europe. LG Chem Research Park aspires to become a place where the world's best scientists and engineers come together to conduct cutting-edge research in an open environment. I envision LG Chem Research Park as the research center where the most talented people hope to work at least once in their lives.

Watch us as we advance towards our vision of becoming the world's best R&D center.

Jin-Nyoung, Yoo | President, LG Chem Research Park

A World-Class Incubator for Chemical R&D

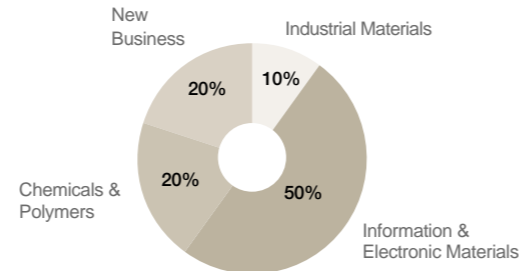


LG Chem Research Park is home to a number of research and development centers engaged in specific scientific disciplines: Advanced Materials R&D, Process Technology R&D, Information & Electronic Materials R&D, Batteries R&D, Mobile Energy R&D, Performance Polymers R&D, Product & Process R&D, Polyolefin R&D, Engineering Plastics R&D, and Industrial Materials R&D. Each center has state-of-art research facilities, and they collectively employ over 1,700 talented and devoted experts.

Business Domain

- Corporate R&D:
 - | Advanced Materials R&D Center
 - | Process Technology R&D Center
- Information & Electronic Materials:
 - | Information & Electronic Materials R&D Center
 - | Batteries R&D Center
 - | Mobile Energy R&D Center
- Chemicals & Polymers:
 - | Performance Polymers R&D Center
 - | Chemicals & Polymers R&D Center,
 - | Polyolefin R&D Center
 - | Engineering Plastics R&D Center
- Industrial Materials:
 - | Industrial Materials R&D Center

R&D Resources Portfolio



Global Network



- ① CPI: Compact Power Inc.
- ② BRDJ: Batteries R&D in Japan
- ③ MSL: Maryland Satellite Laboratory
- ④ MPIP: Max Planck Institute of Polymers

To Become a Leading Global Research Center



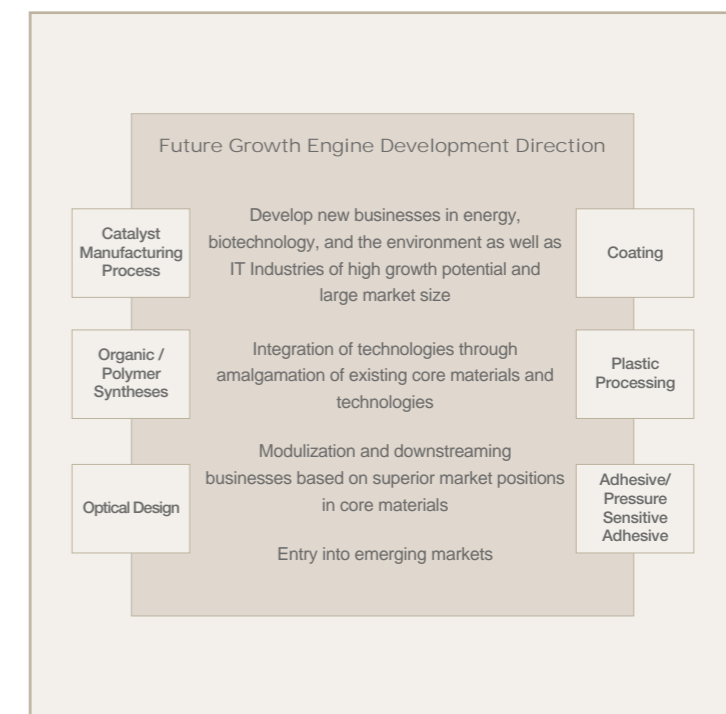
Vision

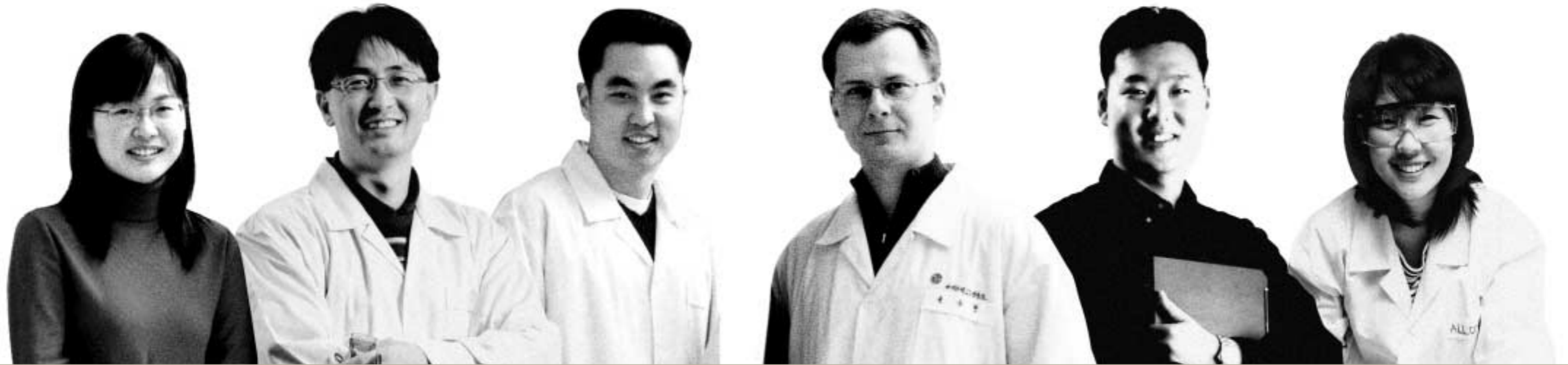
LG Chem Research Park seeks to become a world-class research center that conducts basic research, applied research, and development. We engage in development of new products and new processes on information & electronic materials, petrochemicals, and industrial materials. We are strengthening the global network to lead international chemicals R&D to achieve a technological breakthrough and maintain a lead in core technology.

Strategy

- Hire and Develop CoreTalent[OEWR1]** | Strengthen the Core Competencies by Developing Human Resources
- Technology Advancement in NT/IT/ET/BT** | Take the Technological Lead Based on Core Technologies in NT/IT/ET/BT.
- Amalgamation of Existing Applied Technologies with New Technologies** | Identify and Pursue New Business Prospects by Technology Fusion
- Strategic A&P Promotion** | Expand Personnel and Technology Exchange through Widened Global Partnership Network

Future Growth Engine





People & Organizational Culture

A company's competitive edge is ultimately its people. LG Chem Research Park employs over 1,700 highly-qualified researchers. Our comprehensive HR management, training, flexible benefit plan, and company culture are all designed to ensure that our employees can realize their full potential.



Actively Hiring and Developing Key Experts

LG Chem Research Park employs roughly 1,700 globally renowned researchers. About 25% hold Ph.Ds. In order to retain top researchers, regardless of nationality, race, or gender, we maintain HR pools and actively participate in recruiting events. Furthermore, we will continue to provide scholarships, education sponsorships, and personnel exchange programs as well as standardized education for all the employees that they may develop their talents.

Trust, Challenge, Creativity, and Professionalism

LG Chem Research Park sponsors a voluntary study group known as Research Informal (RI) to encourage discussion and the sharing of creative ideas. The organization also hosts an internal academic conference, Tech Fair, at the end of each year for presentations on research activities to help pave the way for the next wave of projects. It sponsors a number of R&D-related events such as the Best Practice Contest, Knowledge Management Excellence Award, and LG R&D Award to review R&D accomplishments and encourage our employees.

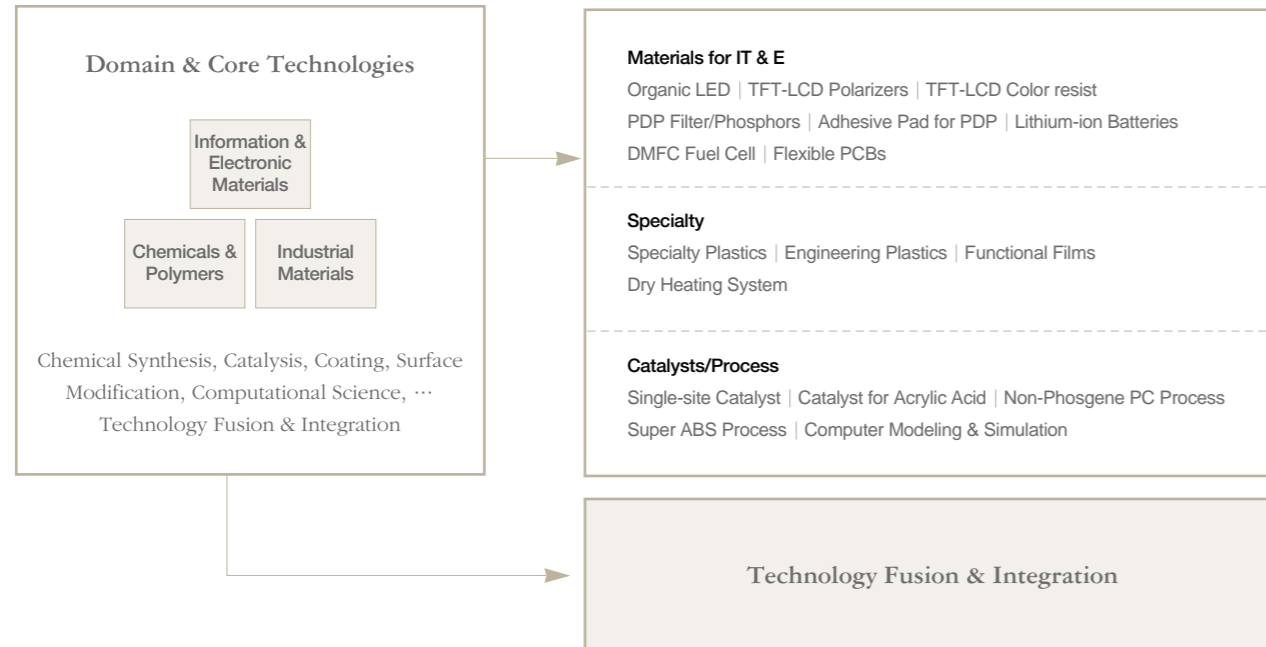
Organization with Open Communications

The president of the LG Chem Research Park personally connects with the research staff on a monthly basis through the Junior Board meeting, and keeps abreast of the organization's activities through the Intranet. Close relationships between the management and on-site research staff promote a forward-looking corporate culture. "Open Community" events are regularly held to create a greater sense of community throughout the organization. They encourage the team work, create synergy effects, improve the research culture, and overcome shortcomings in communications.

Research Facilities and Leisure Activities

LG Chem Research Park has extensive health and leisure facilities for employee fitness and recreation, including a fitness room and racquetball, tennis, and basketball courts. Employees may also enjoy the pond and roof-top garden during breaks and in their free time. Our in-house medical center is available for the employees' immediate medical needs. The nearby company dormitory and apartments also have many leisure facilities.

Core Technologies & Research Accomplishments



→
Innovation through Core & Fusion Technologies

Since its establishment in 1979, LG Chem Research Park has realized remarkable achievements in the development of information & electronic materials, petrochemicals, industrial materials, and platform technologies. It has become renowned both in Korea and overseas as a result of its tremendous successes in business development.

Our research park has developed many high value-added petrochemical products, such as self-dispersing ABS, environment-friendly plasticizers, and high-performance transparent ABS. LG Chem Research Park came into the international spotlight after independently developing and successfully commercializing acrylic manufacturing catalyst. Based on the development of a simulation program, we hope to develop next-generation core technologies in the near future.

A number of high value-added products and premium goods, such as environmentally friendly flooring materials & wallpapers, artificial marble, and optical sheets were commercialized after painstaking R&D into industrial materials.

The Information & Electronic Materials R&D Center succeeded in commercializing high-performance batteries in 1996, just two years after the research began. In April of 2003, it successfully developed and began producing the world's first 2,400mAh cylindrical lithium ion battery. LG Chem Research Park has continued to surprise the world by introducing innovative products and process technologies year after year. The low-reflection polarizer is another first-in-the-world accomplishment by LG Chem Research Park. Our company has carved out a major presence in the display materials area with the development of PDP phosphors, overcoat photoresist, and color filter photoresist. It has also developed the world's first core materials for OLED, the next-generation of displays.



Research Facilities & Systems of the Highest Standards

Located in Daedeok Science Town[OEWR2], LG Chem Research Park boasts state-of-art research facilities, IT systems, and welfare facilities to facilitate research and development to make the company the leader in the chemicals industry. LG Chem Research Park has built a solid network with other leading research institutes in Korea and abroad to strengthen its global partnership and outsourcing potential.

State-of-Art Research Facilities

LG Chem Research Park has laboratories with state-of-the-art analytical instruments, R&D pilot plants, and FAB facilities that are considered the best in the chemical industry. There also are seminar rooms where numerous academic seminars with renowned scholars from Korea and abroad are held, and a library that holds over 1,300 periodicals and 21,000 volumes of chemical literature.

High-End IT Infrastructure & Solutions

LG Chem Research Park independently developed two knowledge management systems known as LINK (Learning & Innovating via Networking of Knowledge) and PMS (Project Management System) to more effectively manage intellectual capital. The system is designed to collect, distribute, and accumulate research knowledge to allow for more efficient applied research. Patent management, the ASP system, high-end IT infrastructure, and diverse solutions are geared toward creating an optimal research environment.

Technology Patents and Value Creation from Intellectual Capital

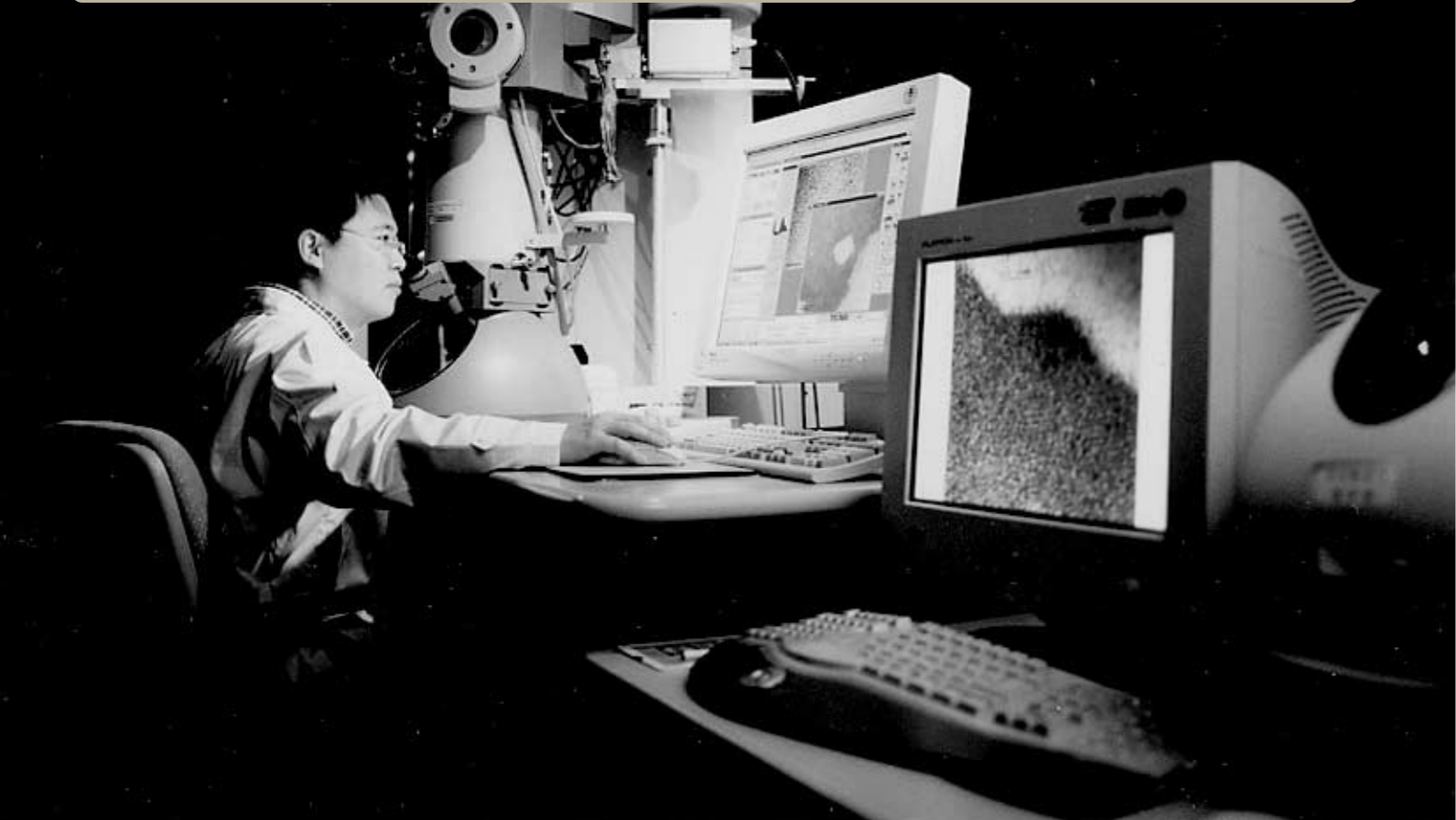
In order for LG Chem to become the top global chemical company, our objectives are to receive key patents for new technologies developed through basic and applied research for future business areas, and to extract maximum value from the intangible assets that stem from the developed technologies. This can be achieved by retaining lawyers and patent experts to strengthen and better manage our intellectual capital. By working closely with our R&D staff from the initial R&D stage to commercialization, we also hope to integrate our R&D management and intellectual management.

Outsourcing through the Global Network

As technologies advance and diversify, outsourcing increasingly becomes a necessity rather than an option. LG Chem Research Park strives to actively expand and strengthen its global partnership network, through which it conducts outsourcing for more effective technology development. This partnership network includes leading corporate bodies, research institutes, and schools from different parts of the world, and each partnership is solidified through cooperation starting at an early development stage.



→
 Establish Core Technology Platform &
 Conduct Basic Research



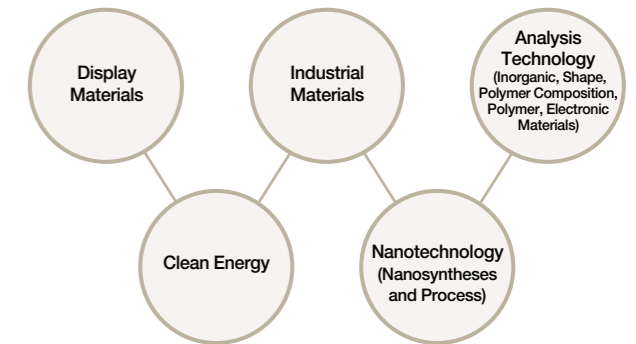
Advanced Materials R&D Center

The Advanced Materials R&D Center includes nanotechnology and analytical centers. It is devoted to strengthening its core technology platform and creating new business opportunities in next-generation display materials, next-generation semiconductor materials, high-performance industrial materials, and other new materials. In 2005, the Nano R&D Center was established to conduct basic research into nanotechnology.

Major Research Accomplishments

TFT-LCD Color Filter Photoresist/ PDP phosphor/ Color Toner/ TFT-LCD Overcoat Photoresist/ PSA for TFT-LCD with Low-Light Leak / OLED/ FPD Coating Materials/ Heat Resistant PSA/ Protection Film for Polarizer

Major Research Fields



Process Technology R&D Center

The Process Technology R&D Center is devoted to the improvement of core technology platforms for the processes, catalysts, and simulation. We are also accelerating the commercialization of new products based on clean energy, display materials, and environment-friendly catalysts. Based on the optimization of lab-developed products and process scale-up, we design and construct pilot plants, which can ultimately lead to factory construction. Using modeling and simulation technologies, we optimize production processes and reduce energy costs to make our products more competitive. We are also researching the core material for fuel cells: MEA.

Major Research Accomplishments

Pyrolytic Recycling Process of Waste Plastic/ Acrylic Manufacturing Catalyst/ NPG (Neopentylglycol) Manufacturing Process/ Construction of CFPR (Color Filter Photoresist) Plant/ Construction of UV Stabilizer Plant/ Construction of Adhesive Plant/ Development of Plant Management System

Major Research Fields





→
Hastening the Coming of the Digital Age

Information & Electronic Materials R&D

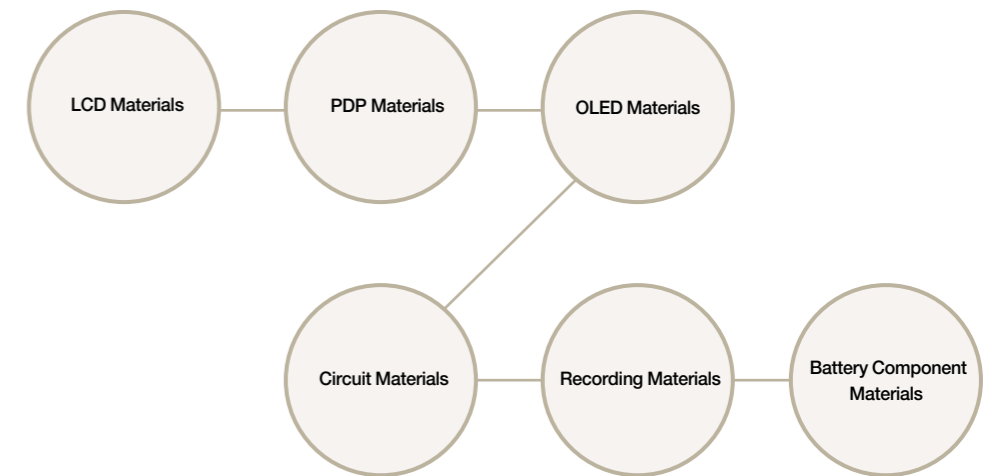
Information & electronic materials are core component materials for digital products such as cell phones, notebook PCs, LCD TVs, and MP3 players. Our R&D center is leveraging its cutting-edge technology to take the lead in high value-added product markets and meet the consumer demands.

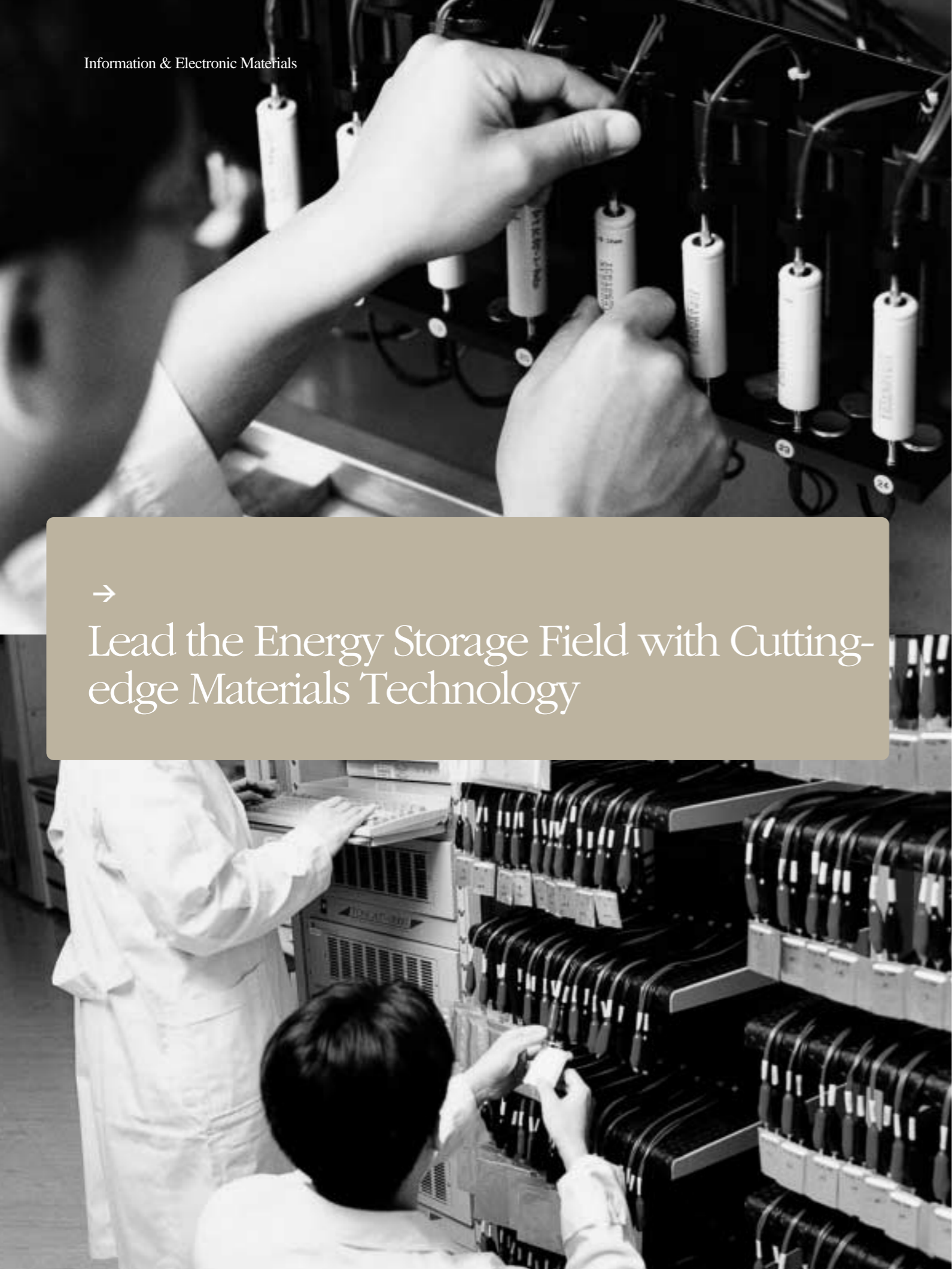
Based on polymer science, optical design, coating, and color control, our R&D center focuses on the development of materials for displays, printed circuit boards, and digital printing. We have successfully developed and commercialized materials for flat panel displays such as LCDs, PDPs, and OLEDs. Our core competencies in the key technologies will enable us to maintain our global leadership in the information and electronic materials industry.

Major Research Accomplishments

TFT-LCD Polarizer (Low-Light Leak, Pure Black, Wide-View)/ TFT LCD Photoresist (Color Filter Photoresist, Black Matrix, Thermally Curable Overcoat, Column Spacer)/ Chemicals for TFT (TFT Photoresist and Stripper)/ Film Type PDP Filter/ High-Efficiency Phosphors (PDP and LCD-Backlight)/ OLED (Highly Efficient/ Durable/ Low Voltage HIL and ETL)/ Mobile Device Circuit Materials (Resin Coated Copper and Flexible Copper Clad Laminates)/ Color Toners for High-Resolution High-Speed Laser Printers

Major Research Fields





→
 Lead the Energy Storage Field with Cutting-edge Materials Technology

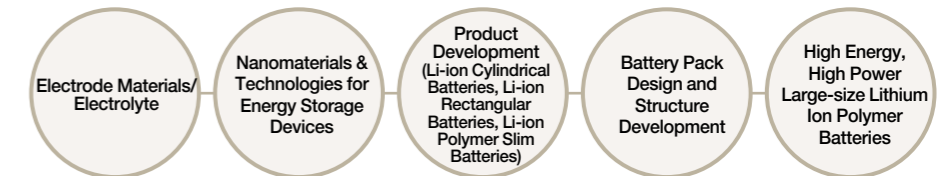
Batteries R&D Center

In addition to semiconductor and display devices, the battery is an essential component in the information age of the 21st century. The Batteries R&D Center is developing high-performance secondary batteries for mobile devices such as cell phones, laptop computers, and camcorders and mid-sized electronics, including electric bicycles and robotic vacuum cleaners. We are working on newly developed high-output secondary batteries for HEVs (Hybrid Electric Vehicle) to conserve energy and help reduce pollution. Our researchers specialize in different fields of chemical engineering, mechanical engineering, and electronic materials and are working together to develop products of the highest standards to lead the international energy storage materials market.

Major Research Accomplishments

First in Korea to Produce Li-ion batteries (1999)/ Development of Li-ion Polymer Battery/ Mid-size Lithium Ion Battery Pack for Electric Bicycles and Robotic Vacuum Cleaner/ Large-size Lithium Ion Battery Pack for Vehicles (Record Setting Champion from Pikes Peak Rally - Electric Vehicle Division in 2002 and 2003)

Major Research Fields



Mobile Energy R&D Center

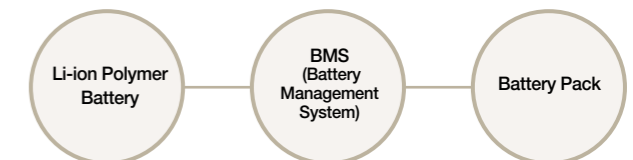
Our research center develops high-capacity & high-performance mid-/large-size batteries based on clean energy technology to help stop global warming and reduce oil dependency. Products requiring long battery life, such as electric bicycles and robot vacuum cleaners have been successfully developed and commercialized. We have the world's leading technologies for large batteries that deliver high instant output for HEVs (Hybrid Electric Vehicle), EVs (Electric Vehicle), and fuel cell vehicles.

Experts in mechanical engineering, electric engineering, chemistry, chemical engineering, metal engineering, and materials science work closely together to develop mid-/large-size batteries.

Major Research Accomplishments

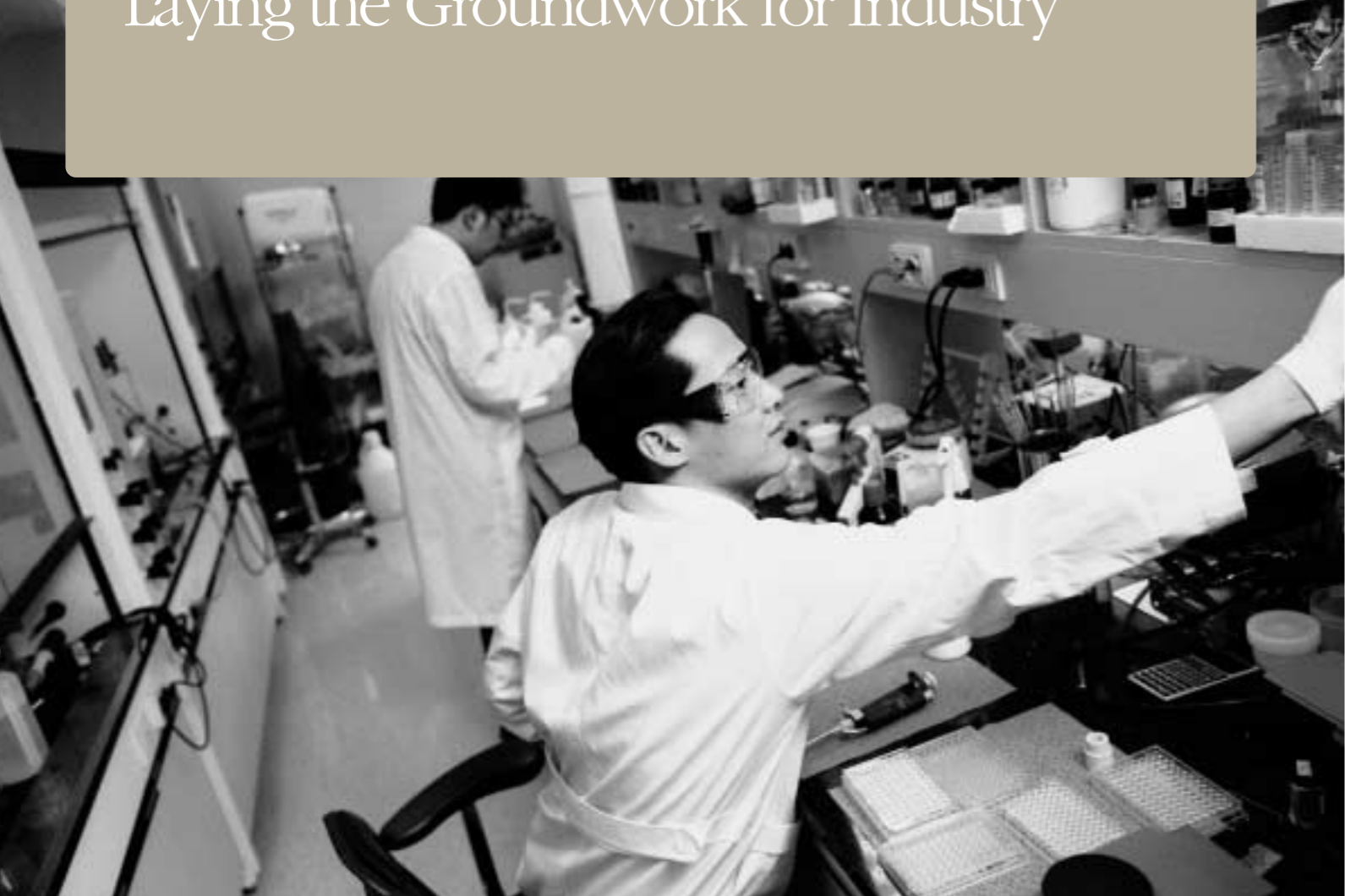
Development of Li-ion Battery Pack for Electric Bicycles and Robotic Vacuum Cleaner/ Development of Mid-size Battery for Robots / Large-size Li-ion Battery Pack for Vehicles

Major Research Fields





→
Laying the Groundwork for Industry



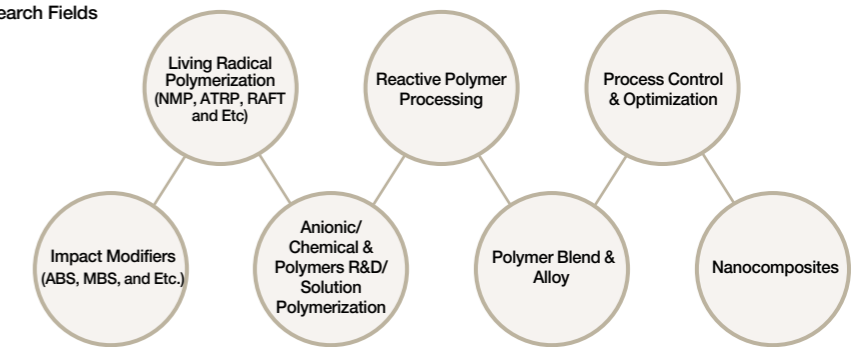
Performance Polymers R&D Center

The Performance Polymers R&D Center focuses on fusion technology, process technology, and polymer alloy technology to develop new materials. Output from our research ranges from new materials used in home appliances; OA materials; and construction and automobile parts to high-performance polymers for high-end information and electronic components and materials, such as batteries and optical materials. We are striving to be the most competitive in the world by through effective quality assurance and new specialty product development based on our core technology platform.

Major Research Accomplishments

Super ABS (MOCIE-Designated Top 100 Technology)/ High-Performance Transparent ABS/ Automotive Specialty ABS/ Methyl Styrene Heat Resistant Resin/ Solution ABS/ High-coloring ASA with Nano Seeds/ Reactive Type Flame Retardant ABS/ High-Efficiency Acrylic & Silicon Impact Modifiers/ High Performance SB Latex/ Transparent & Opaque MBS/ Battery Electrode Binder/ Butadiene-Styrene Plastic Modifier/ Linear tri-Block Copolymer/ Ionomer Heat Resistant Resin

Major Research Fields



Chemicals & Polymers R&D Center

The Chemicals & Polymers R&D Center has focused on creating new businesses and maximizes profits in the Petrochemical & Polymers business such as PVC, VCM/EDC/CA, Oxo Chemicals, Plasticizers and Acrylic Acids and Esters. In addition, we have been developing customized products and securing a new-concept processes to improve productivity and product quality. We will continue to strive to become a global leader in new businesses, and development of high value-added products and technology.

Major Research Accomplishments

Environment-Friendly Plasticizers (EBN/ BET/ EBN-W)/ High-Voltage Special PVC/ Electronic Chemicals/ TMP, TXOH, TXIB, i-Bu acid/ 2-EHA Manufacturing Process/ Independent Acrylic Processing Development/ Acrylic Manufacturing Catalyst Commercialization/ NCC (Naphtha Cracking Center) Procedural Optimization/ NPG (Neopentylglycol) Plant Construction/ CFPR (Color Filter Photoresist) Plant Construction/ UV Process Stabilizer Plant Construction & Commercialization.

Major Research Fields





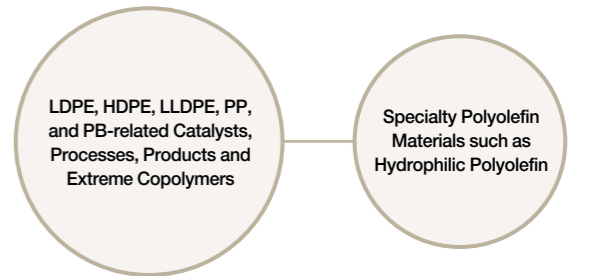
Polyolefin R&D Center

The Polyolefin R&D Center boasts the nation's leading Ziegler-Natta and Metallocene catalyst technology, and the development of new products and manufacturing processes has been achieved by fusing our technology with material science technology. Our primary strategies of research entail specialty goods development, productivity improvement and cost reduction, recruitment and outsourcing of key experts, and safety management. We are striving to become the world leader in polyolefin research in the near future.

Major Research Accomplishments

HDPE Process Improvement in Effectiveness and Productivity/ New Metallocene Catalyst/ Biodegradable HDPE Film/ High-Fluidity mPE Mold Products/ World's First Commercial Production of mPE through Hexane Slurry Process

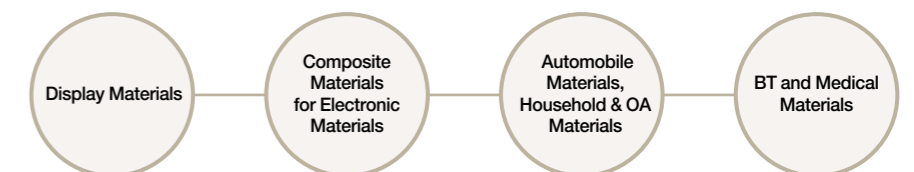
Major Research Fields



Engineering Plastics R&D Center

The EP R&D Center develops next-generation component materials, such as display materials, OA materials, information and electronic materials, high-performance automobile parts, medical materials, and fuel cell materials. In the short run, we are working hard to satisfy customer needs and develop differentiated products by strengthening our platform technologies, such as polymerization technology, polymer blend, alloy technology, plastic processing technology, and component design technology. In the long run, we aim to conduct basic research and acquire core technologies to develop new products and become a global leader in the engineering plastics business.

Major Research Fields





→ Technology for a Beautiful Life

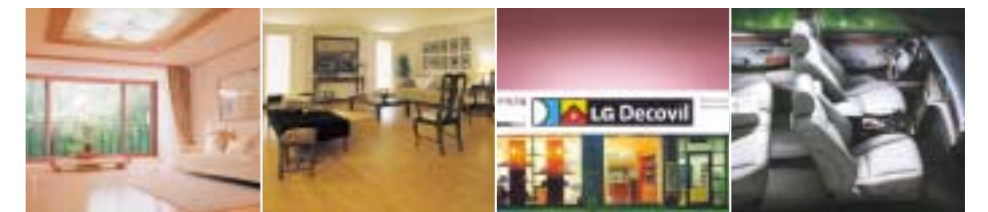
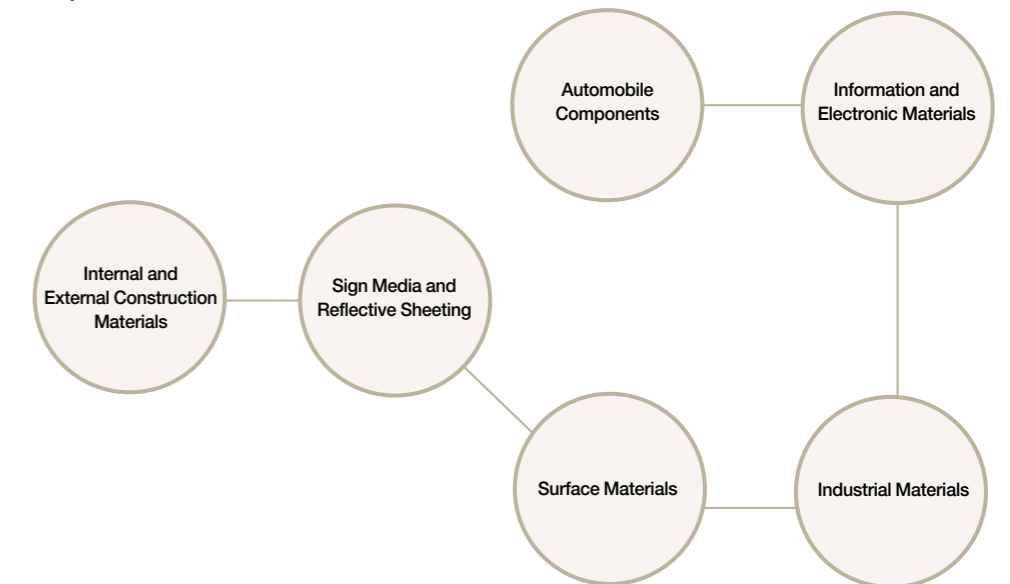
Industrial Materials R&D Center

Based on its core technologies and know-how, the Industrial Materials R&D Center is seeking to lead the market in construction materials, automobile components, sign media, and surface decoration materials. We are developing products that are environment-friendly and conducive to well-being, including natural theme materials, sound control system, and IT products based on new materials and new processes. We have also expanded our research into electronic, energy, and environmental materials for new products and new technologies.

Major Research Accomplishments

Flooring Materials for Athletic Activities/ Environment-Friendly Flooring Materials and Wallpapers/ Construction Materials Composited with Natural Materials/ Auto-Window Systems/Patterned Artificial Marble/ Window system for Tall Buildings

Major Research Fields



History

Dec. 1979 . Lucky Central Research Institute established

Jul. 1984 . Lucky Biotech Corp. (LBC) established

Jan. 1991 . World's first 4th-generation cephalic antibiotics developed (Technology License to Glaxo)

Jun. 1995 . Establishment of LG Chem Research Park

Oct. 1995 . Information and Electronic Materials R&D Center established

Apr. 1996 . Establishment of a US satellite laboratory in Maryland university

Jul. 1996 . Establishment of LG BMI (MG Biomedical Institute)

May 1997 . Quinolone antibiotics technology licensed to SmithKline Beecham

Jan. 1998 . Secondary lithium ion battery developed

Oct. 1999 . Developed display materials

Jan 2000 . Compact Power Inc. established

Dec. 2000 . Presidential award for the best corporate research institute received in celebration of establishment of 5,000 corporate research institutes in Korea . Commercial production of the secondary lithium polymer battery

Apr. 2001 . LG Chemicals split into three companies (LG Chem, LG Household & Healthcare, and LG Life Sciences) . Received grand prize of the Industrial Technology Innovation Awards for TFT-LCD polarizer

2002 . Transparent ABS received the grand prize of the Industrial Technology Innovation Awards

Apr. 2003 . World's first 2,400mAh lithium ion cylindrical battery developed

May 2003 . Non-phosgene polycarbonate process developed

Oct. 2003 . OLED core technologies secured & adopted for mass production

Feb. 2004 . Completion of FAB

Aug. 2004 . Lithium polymer battery development project for HEVs commissioned by US Advanced Battery Consortium (Big 3 automotive consortium in the US)

Dec. 2004 . LG Chem Industrial Materials Tech Center established in Tianjin, China

Jan. 1, 2005 . Nano R&D Center established

Feb. 1, 2005 . Seoul R&D Branch established

Jun. 2005 . Established International Satellite Laboratories (MPIP, MSU, and Tsinghua University)

Sept. 2005 . Developed direct methanol fuel cell

Dec. 2005 . Established customized educational program with KAIST

www.rnd.lgchem.com

