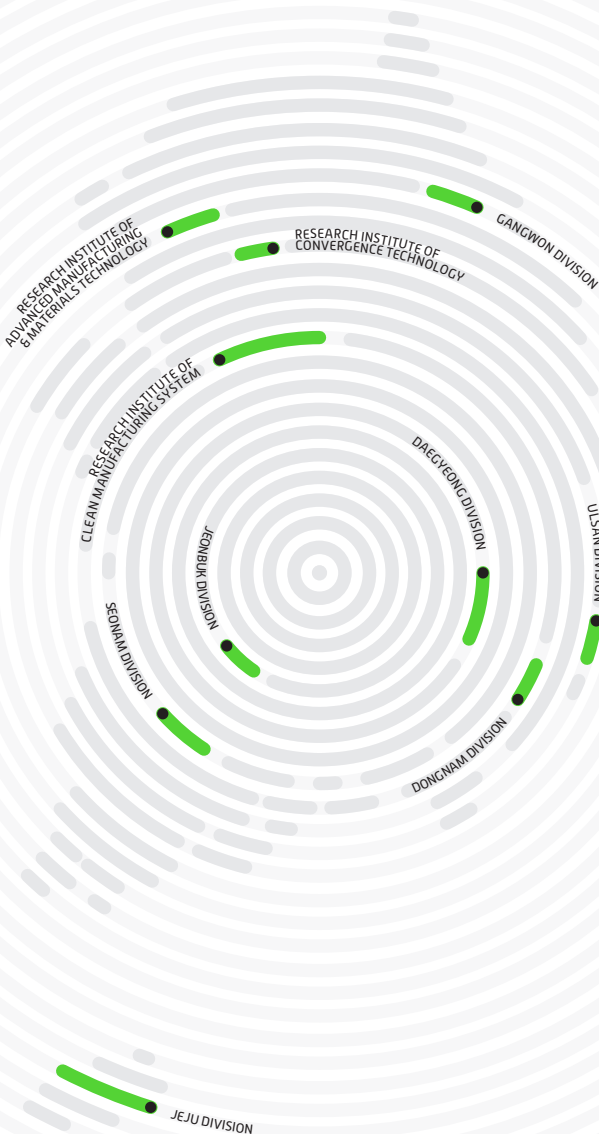


ALWAYS ON THE GO,
KITECH





ALWAYS ON THE GO, KITECH

There are many institutes that support SMEs,
but KITECH is the only application-oriented research institute,
focusing on technology commercialization.
Consult with KITECH to find solutions to technology difficulties in the fields.
KITECH will be there wherever SMEs are in need of help.

HISTORY OF KITECH

Mission and Key Functions

KITECH was founded in 1989 with the objective to support industry sector, especially SMEs. KITECH drives the nation’s industrial advancement by developing and commercializing fundamental technologies, technology support and disseminating the achievements of SMEs.

1989~
1997

Founded as a research institute for comprehensive application research with a primary focus on supporting SMEs

1998~
2003

Built a systematic framework for SMEs support

Foundation and Ground Building

- 1989 | Founded as an affiliated institute of the Ministry of Commerce & Industry
- 1994 | Pioneered the rise of HDTV in Korea
- 1997 | Relocated the head office(Cheonan, Chungnam)
It was renamed as Korea Institute of Industrial Technology

Growth and Development

- 2002 | Developed Korean high-speed train(350km/h)
- 2003 | Designated as 'Technology of the Year' by the Ministry of Education, Science & Technology(Cyber Engineer U24)

2004 ~
2012

Built a close-range technology support framework
for field-oriented support

2013 ~

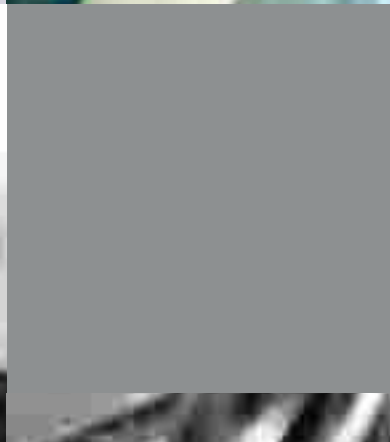
Nurtured global SMEs
resulting in tangible outcomes

Established Regional Framework

2004	Incheon Research Center was constructed (Current Research Institute of Advanced Manufacturing & Materials Technology)
2006	Gwangju Research Center was constructed (Current Seonam Division)
2007	Developed android robot, 1 st in Korea and 2 nd in the world Ansan Research Center was constructed (Current Research Institute of Convergence Technology) Busan Research Center was constructed (Current Dongnam Division)
2009	Developed wafer ingot manufacturing technology for solar cells
2011	Developed the world's first Eco-Magnesium and Eco-Aluminum alloy technology
2012	Certified as the best service quality institute for the first time as a government-run institutes Gangwon Division was established

New Growth Phase

2013	Became an institute affiliated with the Ministry of Science, ICT and Future Planning Daegyeong Division was constructed
2015	Selected as the "excellent institute for technology transfer, commercialization, and startups" for two consecutive years by Ministry of Trade, Industry and Energy Reorganized the institute to have a system with 3 research centers and 7 Divisions and Established in Ulsan, Jeonbuk and Jeju Divisions
2016	Selected as the "excellent institute for technology transfer, commercialization, and startups" for two consecutive years by Ministry of Science, ICT and Future Planning Launched the pilot project for Chungbuk Division
2018	Transferred the eco aluminum processing technology to Poland Started operating the technology exchange and flexible research system
2019	Established Korea-Russia Innovation Center Celebrated the 30th anniversary of KITECH



● ALWAYS ON THE GO, KITECH





ALWAYS ON THE GO, KITECH

“

KITECH is always on the move, pondering and studying to provide technology support that is essential to Korea's industrial advancement.

We will never stop and we will do our best to stay close to the SMEs manufacturing field.

”



MESSAGE FROM THE PRESIDENT

● President of Korea Institute of Industrial Technology / Ph.D. Nak Kyu, Lee

Nak Kyu Lee



KITECH will drive manufacturing innovation through industrial intelligentization for SMEs and middle-standing enterprises

KITECH is a research institute specialized in technology commercialization. Established in 1989, it aims to provide support for the industrial world, especially for manufacturing-based SMEs and middle-standing enterprises.

To help raise the competitiveness of SMEs and middle-standing enterprises, the backbone of Korea's industries, KITECH devotes its efforts to supporting original industrial technologies and their commercialization under the vision 'Global KITECH leading manufacturing innovation.'



The megatrends in the manufacturing industry are rapidly changing, such as the advent of the new normal of hyper-uncertainty and the Fourth Industrial Revolution.

In this era, which will be known as the golden age of manufacturing innovation, manufacturing innovation through industrial intelligentization is becoming ever-important. KITECH will accompany SMEs and middle-standing enterprises to help them safely navigate this age of change.



We will further concentrate on developing core original technologies and continue to help SMEs and middle-standing enterprises improve their technology competitiveness in the future.

Through this, KITECH will become a research institute that demonstrates visions for enterprises and exhibits reliability and hope to the public.

Thank you.

SME TALK

Small & Medium Sized Enterprise

Partner Company | Lee Ho-seok, CEO of Vision Tech (Co.)

KITECH is a ‘Reliable Partner’

We jumped into the already-saturated market just with one brilliant idea. The thing is, we did not have the technology and workforce to turn our ideas into reality. That was when KITECH came to us. After meeting the institute, we worked around the clock, even on weekends. Come to think of it, we were so desperate to care for KITECH, but they never turned down our requests. The researcher from KITECH worked and helped us just as if he was the research head of Vision Tech and we had free access to the research labs of KITECH just as they were ours. For partner companies, KITECH is like a life partner that can be relied upon with no worries.





Technology Talents Support Project | Cho Jong-hyun, Research Head of Sun Tech (Co.)

INTERVIEW >>

KITECH is ‘Stepping Stone’ Bridging People and Companies

Even when I went through hard time working as a part time instructor at universities I never dreamed of working for SMEs. But while I worked as a research for business support sector I came to encounter Sun Tech. At first I was assigned to the company for 3 years as a member dispatched from KITECH and while working there and seeing the things going on in the field, I realized that this is the workplace for me and source of energy to my life. So I decided to leave at Sun Tech. It was always KITECH that gave me a chance to experience field work at SMEs and helped me to decide to stay at SMEs. KITECH is stepping stone for me to show new world and guide me into safe path towards the new world.



Business Start-Ups Incubation Center | Park Ju-hyun, CEO of Rourm High Tech (Co.)

KITECH is an ‘Almighty Mentor’

Many businessmen dream of starting their own businesses, but rising to the challenge of starting a whole new life and leaving behind a stable comfort zone is easier said than done. That is why the role of the Business Start-Ups Incubation Center is so important. It provides resources support until start-ups are competent enough to stay afloat on their own. There are many centers like this one that are run by other institutions and universities, but I would like to recommend KITECH for those who are planning to start their own businesses. For Rourm High Tech, an IT precision chemical products manufacturer, experts and equipment are essential and KITECH is an optimal place that has everything we need. When we faced technological obstacles, not only did we have access to KITECH’s high-tech research equipment but also guidance from experienced researchers at the institute. It helped a lot in preparation for the future, including our readiness for the next generation of market. For me, KITECH is like an almighty mentor.

Technology Transfer | Jung Chang-geon, CEO of Hansco (CO.)

INTERVIEW >>

KITECH is a ‘Supporter that Provides us with Customized Help in the Field’

Size does not matter. Every company has to read the trend and stay ready for change.

They need to explore new market. Hansco also went through the same challenge and focused on exploring new business items and was able to find the new keyword: ‘Titanium.’ Yet we still faced the challenge of figuring out how to further develop this new item. While we were struggling to find the way just doing market research, we came to know the ‘Technology Transfer Program’ of KITECH and were able to get ‘Titanium Metal refinement’ technology transfer.

Since then, witnessing that everything went so smoothly and fast with the support of systematic and seamless technology transfer of KITECH, we came to have firm belief in KITECH that it develops essential technologies for companies and establishes optimal process to transfer the technologies. With KITECH standing close to the industrial field, we feel so reassured that the help is just around the corner when we need.





01

R&D IN THREE KEY AREAS

R&D IN THREE KEY AREAS OF KITECH

“

KITECH has been reinforcing the strength of the country's industries by selecting fundamental advanced manufacturing & materials technology, clean manufacturing system, convergence technology imperatively necessary for the advancement of SMEs, medium-sized firms and the manufacturing sector as the three major fields of research, and through demand-oriented R&D and commercialization and securing of future source technologies.

”





ADVANCED MANUFACTURING & MATERIALS TECHNOLOGY



Advanced manufacturing & materials technology,
the underlying foundation of manufacturing competitiveness of Korea,
KITECH creates “ACE” technology.

The six ppuri technologies of casting, molding, heat processing, surfacing,
plastic working and welding are the essential technologies to the process of turning raw materials into
industrial materials and from materials to parts. KITECH takes the lead in improving
the technology competitiveness of SMEs and the quality competitiveness of Korea’s major industries
by focusing on developing ppuri technology with dedicated research teams
that have outstanding experience and capabilities.



Major achievements in commercializing the research findings of advanced manufacturing & materials technology

Development of core materials such as Eco-Al and Eco-Mg

Led next-generation alloy technology by developing core materials technology enhanced with eco-friendly materials, for the first time in the world

Development of new coating materials and manufacturing base technology

Developed the world's first thin coating materials with low-friction and high-corrosion resistance to improve car mileage and parts life by 4~7%

Developed 3D printing bio-implant manufacturing technologies

Achieved success in producing and transplanting an artificial skull in a human body (Apr 2016) by developing high intensity titanium for human and medical purposes through 3D printing design

Development of technologies for mass purification of organic material hybrids for OLED

Leading the OLED market by mass production of high purity and high efficiency organic luminescent materials through ILs refining methods, and invested by a research enterprise, Ilsol Red, Co. Ltd.



CLEAN MANUFACTURING SYSTEM



KITECH supports sustainable growth of Korean industry by developing energy-efficient and eco-friendly manufacturing systems.

To ensure adjustment to changes in global environments and achieve sustainable growth, it is imperative to turn to clean manufacturing system that consume less energy and ensure higher productivity. KITECH makes efforts to advance the manufacturing framework of the domestic manufacturing industry by adding the concept of “Clean” to the manufacturing system field.



Major achievements in commercializing the research findings of sustainable clean manufacturing system technology

Developed source technologies for aluminum core using eco-friendly inorganic binder

Developed one of the world's best source technologies for eco-friendly inorganic binder which do not produce harmful gases are renewable

Developed technologies manufacturing a catalyst purifying the air by removing nitrogen oxide

Produced SCR catalyst with low cost and high efficiency which deoxidizes nitrogen oxide by using the Nano loading technology which reduces the size of catalyst and specific surface area

Developed titanium scrap, sponge refining and ingot manufacturing technologies

Developed technologies that can refine and scour titanium scrap or sponge by utilizing the world's first EMCC and HPAR

Developed web-based manufacturing and design simulation system

Fostered an ecosystem of domestic smart plants by developing manufacturing and designing platform technologies which provide manufacturing processes with IT solutions



CONVERGENCE TECHNOLOGY



KITECH leads the innovation of existing industries and creates new markets by developing convergence technology.

The days are gone when single technology dominated the market. In the field of convergence technology, where technological limitations are challenged and overcome and a new future is opened with convergence between technologies, technology and industry, or between industries. KITECH leads the way in the field of convergence technology.



Major achievements in commercializing the research findings on convergence technology

Developed an emotional and sympathetic android robot “EveR”

Developed the world’s highest level of robot’s emotion algorithm which realizes human’s expressions Strengthened robot’s competitiveness in Korea including transferring element technologies to 7 companies

Developed “Hyper,” the robot suit with enhanced strength

Developed a robot suit capable of working for nine hours carrying up to 120 kg for fieldwork in construction sites, extreme fields and disaster sites

Developed felt-type adhesion-prevention device

Transformed CMC becomes jelly when it touches water into felt to develop an adhesion-prevention device that is easy to use

Developed the next generation stage setting “Smart Stage”

Developed the world’s first stage setting that can be moved freely to four directions (front/back, left/right, rotation, rising) simultaneously, securing the competitiveness of domestic culture industry.

BUILDING A FIELD-ORIENTED TECHNOLOGY COMMERCIALIZATION SUPPORT FRAMEWORK

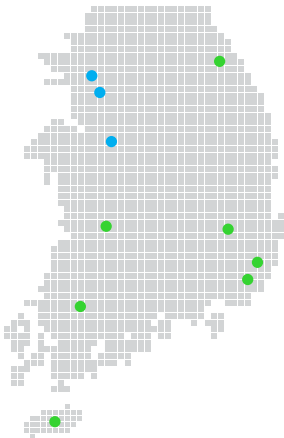
“

KITECH is leading technology support across the nation with extensive network of research centers specialized in the 3 key research areas: advanced manufacturing & materials technology, convergence technology and clean manufacturing system.

With an aim to reduce blind spot in technology transfer for SMEs and to respond more effectively to the needs, we are establishing and running 7 divisions of Seonam, Dongnam, Daegyeong, Gangwon, Ulsan, Jeonbuk and Jeju to strengthen technology transfer customized to the needs of the field.

”

02 DIVISION





Research Institute of
Advanced Manufacturing &
Materials Technology

Research Institute of
Convergence Technology

Research Institute of
Clean Manufacturing System

Seonam Division

Dongnam Division

Daegyeong Division

Gangwon Division

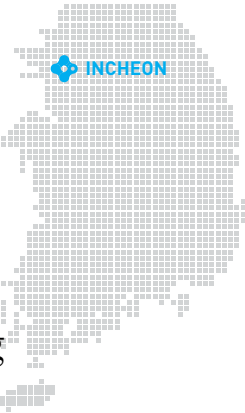
Ulsan Division

Jeonbuk Division

Jeju Division



RESEARCH INSTITUTE OF ADVANCED MANUFACTURING & MATERIALS TECHNOLOGY



Long-Term Support for the Future of Advanced Manufacturing & Materials Technology Development

Research institute of advanced manufacturing & materials technology in incheon, where the research and support units for the 6 ppuri industrial technologies* are located, is where kitech's ppuri and future lie. The division is transforming the ppuri industrial that is underpinning the traditional manufacturing industry into a future-oriented high-tech industry with various approaches, including R&D of core ppuri technology and commercialization and researcher dispatch to help resolve technology issues.

* 6 ppuri industrial Technologies: casting, molding, heat processing, surfacing, plastic working, welding



Research and Support Details |

Shape Manufacturing R&D Department

- Development and commercialization of original and platform technologies for smart casting
- Development and commercialization of intelligent smart molding technologies and advanced injection and press molding technologies
- Development and commercialization of metal forming technologies for difficult-to-form materials capable of securing critical performance

Advanced Functional Technology R&D Department

- Development and commercialization of AI- and IoT-based welding monitoring, prediction, and control technologies
- Development and commercialization of bonding materials and bonding technologies for semiconductors and electronic packaging
- Development and commercialization of new surface processing technologies with high added value for future use

Intelligent Manufacturing R&D Department

- Development and commercialization of advanced equipment and original technologies for heat treatment and multi-functional nanoscale composite coating technologies
- Support for future smart factories, Manufacturing Industry Innovation 3.0, and ICT convergence
- Technology development and demonstration support for manufacturing innovation of three-dimensional printing-based industrial components

Advanced Materials and Process R&D Department

- Development and commercialization of technologies for applying eco-friendly lightweight metals (Al, Mg, Ti) to components
- Development and commercialization of manufacturing technologies for high-functionality powder, high-quality wire/board, and clad
- Development and commercialization of technologies for multi-functional quantum dot material composition and its application to optical images







RESEARCH INSTITUTE OF CONVERGENCE TECHNOLOGY

Cradle of the High Added-Value
New Convergence Industry



Research institute of convergence technology to lead innovation of existing industries explores future growth engines to drive the economy by developing and commercializing robots, high-tech medical fibers, ultra-precision nanotechnology, wellness systems, packaging technology and technology for cultural industry.



Research and Support Details |

Applied Robot R&D Department

- Development and commercialization of technologies for manufacturing robots and human-assisting robots
- Development and commercialization of technologies for professional service robots (for common use or exhibition, integrated with virtual environments)
- Development and commercialization of technologies for medical and rehabilitation-assisting robots

Manufacturing Process Platform R&D Department

- R&D and commercialization of manufacturing intelligentization platform for processing electronic components and materials for key industries and new businesses
- R&D and commercialization of IT-powered platforms for treatment, equipment, and process control

Advanced Textile R&D Department

- Development and commercialization of technologies for fiber polymer synthesis and reforming, fiber spinning and structure control, and non-woven fabric manufacturing and its application
- Development and commercialization of technologies for advanced 6T(IT, BT, NT, ET, ST, CT)-powered smart fibers and their application to wearables
- Development and commercialization of fiber-based productization (for the transportation, medical, environmental, electronic, and energy fields) technologies

Human Convergence Technology R&D Department

- Development and commercialization of technologies for fine chemical, fiber, polymer and biomaterials
- R&D and commercialization of human factors engineering-based smart textronics and wearable devices
- Development and commercialization of advanced technology-powered contents and platforms for the performance and exhibition industry



RESEARCH INSTITUTE OF CLEAN MANUFACTURING SYSTEM



Headquarters for Clean Manufacturing System Development

Research institute of clean manufacturing system leads clean manufacturing system development and commercialization, including high functional, high performance and high intelligence technologies. The division's priority is advancing the manufacturing systems of the industry field by developing eco-friendly materials and processes and energy-efficient manufacturing systems.



Research and Support Details |

Intelligent Manufacturing System R&D Department

- Development and commercialization of advanced material processing technology and manufacturing robot-based flexible processing and manufacturing system technology for lightweight thin-plate components
- Development and commercialization of a platform for product-process-equipment data management, operation, and service and of interface technology for integration of manufacturing equipment
- Development and commercialization of cooperation-based smart safety system technology for manufacturing and robot processing

Innovative Smart Manufacturing R&D Department

- Development and commercialization of smart manufacturing-based application technologies
- Development and commercialization of advanced optics application technology, data processing technology for smart factories, and smart sensor technology

Clean Energy R&D Department

- Development and commercialization of sustainable combustion technology and technology for recovering energy from waste resources
- Development and commercialization of technologies for designing, interpreting, and improving the efficiency of sustainable components and systems

Green and Sustainable Materials R&D Department

- Development and commercialization of eco-friendly material (biomass, eco-friendly plastic, biofuel) technologies
- Development and commercialization of material technology for IT and smart devices







SEONAM DIVISION



Key Player in the Region to Lead Seonam’s Industrial Advancement

Seonam division established to change the industrial structure in the Seonam region into high value added type has been leading the development of regional specialized industries through developing and commercializing power component material, light energy converging technology, green processing technology, nano convergence display lighting technology.



Research and Support Details |

Smart Mobility Materials and Components R&D group

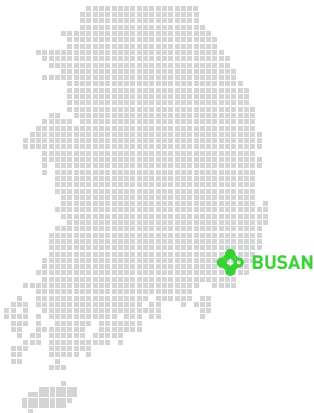
- Development and commercialization of core smart mobility system technologies
- Development and commercialization of eco-friendly lightweight material technologies
- Development and commercialization of electromotive force application technologies
- Development and commercialization of ultra-precision processing and molding technologies
- Development and commercialization of welding and bonding technologies

Smart Energy and Nano Photonics R&D Group

- Development and commercialization of technologies for smart energy production, storage, and application
- Development and commercialization of optics and nano -technology convergence



DONGNAM DIVISION



Center of Korea’s Backbone Industry

Dongnam region encompassing Busan and Gyeongnam province is the center of Korea’s key industries and traffic/logistics. The Dongnam division has supported the development of regional industries through the commercialization of technologies in major key industries while exploring new growth engines in the Dongnam region such as offshore plant equipment, automobile parts and equipment.



Research and Support Details |

Advanced Energy Materials & Components R&D Group

- Development and commercialization of technologies for enhancing properties of energy materials
- Development and commercialization of technologies for offshore plant equipment
- Development and commercialization of core plant technologies related to energy environment and resources

Precision Mechanical Process and Control R&D Group

- Development and commercialization of DNA (Data, Network, AI)-based technologies for precision processing and root industry intelligentization, and smart manufacturing
- Development and commercialization of technologies for intelligent machine parts and systems
- Development and commercialization of technologies for marine robot parts and systems
- Development and commercialization of ultra-precision molding and processing technologies for improving productivity in manufacturing high-efficiency and high-performance components







DAEGYEONG DIVISION



Outpost for Strategy: Daegyeong Region's Specialized Industry

There has been the division in Daegu and Gyeongbuk province on the backdrop of the rebirth of the region into special area for R&D, as the division has worked hard to revitalize depressed regional economies and create new growth engines. The division has nurtured regional SMEs and mid-sized firms by developing and commercializing technologies in connection with specialized industries in Daegu and Gyeongbuk region such as IT, mechatronics, aviation system.



Research and Support Details |

Mechanical Components & Materials R&D group

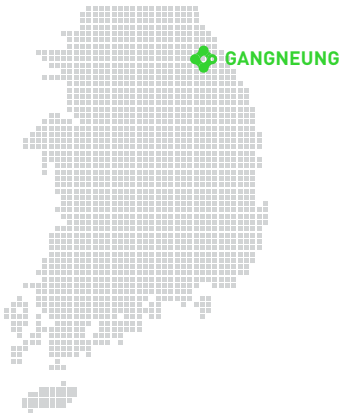
- Development and commercialization of advanced root technologies for molding and of AI-based intelligent root technologies
- Development and commercialization of original technologies for manufacturing high-quality, high-functionality, and high-performance castings
- Development and commercialization of advanced machine parts manufacturing technologies and of technologies for remanufacturing and reproducing components with high added value
- Development and commercialization of domestic bearing- and lubricant-related technologies

Safety System R&D Group

- Development and commercialization of original technologies for the mechatronics industry to build future automotive and robot ecosystems
- Development and commercialization of technologies for manufacturing next-generation construction equipment and components, and biomedical devices
- Establishment of an avionics test and evaluation system; development and commercialization of domestic aviation parts and avionics system



GANGWON DIVISION



Empower Gangwon Province with a Strengthened Manufacturing Base

Gangwon division supports the growth of the Gangwon region and helps strengthen the manufacturing base by nurturing the nonferrous metal industry into a specialty of the region. The division focuses on materializing and commercializing nonferrous materials that are applicable across various industries including cars, electronics and electricity, shipbuilding, semiconductors and medical components.



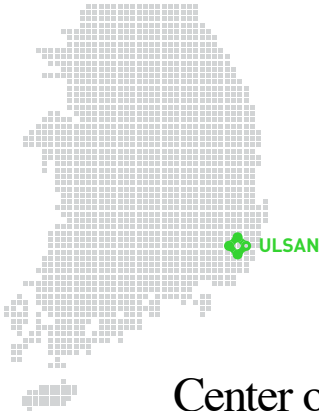
Research and Support Details |

Functional Materials & Components R&D Group

- Development of original material technologies for three-dimensional printing; development and commercialization of three-dimensional printing and processing technologies
- Development and commercialization of technologies for nonferrous metal materialization (high-purity, alloy, pulverization) and post-processing







ULSAN DIVISION



Center of Green Energy R&D

The division in Ulsan is preparing for the future industries based on eco-friendly clean technologies. Ulsan which has led the country's economy as the industrial capital is sophisticating the regional industries based on eco-friendly clean technologies and climate change responding technologies which will be new growth engines for the region.



Research and Support Details |

Green Materials & Processes R&D Group

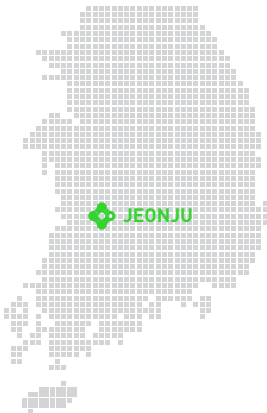
- Development and commercialization of technologies for greenhouse gas collection, utilization, and isolation
- Development and commercialization of catalytic processes capable of reducing industrial fine dusts and causative materials (SOx/NOx/VOCs/foul smell)
- Development and commercialization of technologies for hydrogen energy production, storage, transportation, and utilization
- Development and commercialization of technologies for process intelligentization applying process data-based AI and machine learning
- Development and commercialization of technologies for composing and manufacturing eco-friendly high-efficiency chemical and energy materials

Advanced Forming Process R&D Group

- Development and commercialization of welding and bonding technologies in response to the Fourth Industrial Revolution
- Development and commercialization of eco-friendly nonferrous die casting and forming technologies
- Development of three-dimensional printing technologies for industrial metal, ceramic, and plastic materials and their assessment and analysis
- Advancement of automobile parts and ship equipment products based on high-energy technologies(laser, plasma)
- Adding high value to products by precisely processing the surface and adding surface characteristics using high-energy laser



JEONBUK DIVISION



High-Tech Post of Convergence Components and Agricultural Machinery Industry

The division in Jeonbuk province has nurtured the major industries in the region represented by agricultural machinery, automobile, and new renewable energies in order to advance the industries through developing and supporting fusion technologies. The division has led the revitalization of regional industries through the advancement of industrial structures in the Jeollabuk-do Province which is emerging as the center of economies in the west coast region.



Research and Support Details |

Smart Agricultural Machinery R&D Group

- Development and commercialization of technologies for ICT-powered agricultural machine systems
- Development and commercialization of agricultural machine performance and reliability assessment technologies
- Development and commercialization of advanced material and component technologies
- Development and commercialization of ICT-powered root process technologies

Carbon Materials Application R&D Group

- Development and commercialization of technologies for designing and manufacturing carbon nanoscale composite materials
- Development and commercialization of multifunctional components applying carbon nanoscale composite materials
- Development and commercialization of technologies for manufacturing and applying lightweight materials
- Development and commercialization of technologies for manufacturing lightweight, high-strength, and high-performance components







JEJU DIVISION



Technology Think Tank for Green Eco Resources and High Value-Added Technology for the Future

With establishment of creative convergence industrial base, tapping into the abundant natural resources of Jeju, an island blessed with natural prosperity, robust new growth engine for the future can be created. To realize carbon free island, Jeju division is making efforts to develop technology based on green natural resources of Jeju and support SMEs R&D productivity enhancement and regional industrial structure improvement by building R&D network across the industry, academia, research and regulatory sectors.



Research and Support Details |

Sustainable Technology and Wellness R&D Group

- Development and commercialization of technologies for productizing Jeju's unique natural ecological resources with high added value
- Development of technologies and establishment of foundations for knowledge-based sustainable manufacturing innovation for quick digital product development
- Development and commercialization of technologies for zero-waste and upcycling value addition and for reducing environmental impact
- Development of technologies for biometrics, environment, and hazardous ingredient monitoring and for smart healthcare
- Development of core technologies and establishment of foundations for electric cars, new and renewable energy, and smart grid to fulfill zero-carbon objective
- Development and commercialization of key strategic elements to build Jeju's Fourth Industrial Revolution platform and of technologies for organic convergence and to innovate Jeju's industries
- Establishment of an independent regional manufacturing technology support system



KITECH SUPPORT SERVICES FOR SMEs

“

KITECH has enhanced technological competitiveness of SMEs and medium-sized firms by providing various supports and services from systems for partner companies which support the companies by transferring technologies for commercializing technologies required in manufacturing sites, and to the opening of laboratories for the companies lacking equipment and facilities, and the operation of research facilities dedicated to SMEs.

”



03

SUPPORT SERVICES FOR SMEs

Technology Transfer Process Introduction

Research Partner System

Operation of Research Facilities Dedicated to SMEs

Open Labs





TECHNOLOGY TRANSFER PROCESS INTRODUCTION

Facilitating Technology Transfer with an Internally Developed R&BD Process

As an institute specialized in commercialization, KITECH builds an internal R&BD process and explores and develops needs-based technologies from the early stages of R&D. At the same time, KITECH runs an intellectual property (IP) management support service system to regularly oversee performance and achievements from patent applications, technology transfer and business development and after-management.

Meaning and Objectives of Technology Transfer

- > To Improve success rate of commercialization of technology by sharing KITECH R&D outcomes (technology, knowledge, information)

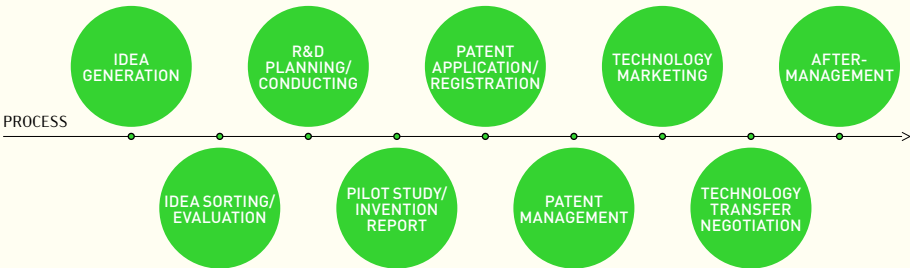
Understanding of Technology Transfer

- > Technology type: Intellectual property right and know-how technology transfer
- > Ownership transfer: Technology licensing (free or paid), sales, technology investment, others (M&A)
- > Types of technology licensing: Designated licensing (including exclusive licensing) and exclusive licensing

Technology Business Development Strategy Program Operation

- > 350% increase in the number of technology transfer with Super IP Business and Tailored R&D initiatives

KITECH R&D Process for Technology Transfer and Business Development





RESEARCH PARTNER SYSTEM

Offering Tailored Support Services to Help Companies Grow

The research partner system is based on a concept of family companies for those in close partnership with KITECH. The system is designed to help SMEs grow to be global players with customized close-range support. The companies selected as partners are provided various types of support including R&D-based priority technology support, technology innovation support based on technology community and close-range support in the field.

Qualifications of Partner Companies

- > Companies that successfully performed joint research and development with KITECH
- > Companies that received KITECH's technology support
- > Companies signing contracts for patent technology transfer with KITECH
- > Technology-intensive enterprises with high growth potential in the material, component, and equipment industries

Companies in active partnership out of these targets

Details of Support for Partner Enterprises

R&d-based technical support

"Short-term R&D Projects to Solve Technology Challenges"

"Industry and Research Institute Collaboration Projects"

Supports joint studies through government-consigned support projects

Research equipment support

Provides research equipment through open laboratories and SME-exclusive research facilities

Dispatch of excellent re-search personnel

Dispatches high-ranking personnel with master's or doctor's degrees as key R&D personnel for a long term(three years)

Demand-based field-oriented support

Provides onsite technical consultations, through business trips and dispatches, for enterprises experiencing technology challenges

1 enterprise /
1 mentor technical support

Technology information support

Provides regular support for technology information through national R&D projects, government policies, education programs, seminars, patent technology transfers, technology trends, and technology forums

Exchange of technology Innovation through technology communities

Supports technology exchange among enterprises such as new market discovery, R&D achievement sharing, etc. through 32 technology communities(454 enterprises)





OPERATION OF RESEARCH FACILITIES DEDICATED TO SMEs(RENTAL LAB)

Strengthening research capacity of SMEs and medium-sized firms by providing dedicated research facilities

The Institute has helped the SMEs and medium-sized companies which perform joint researches with KITECH or want to efficiently use equipment by providing them with space for researches, and assisted the enhancement of productivity and technological competitiveness of companies by providing close supports utilizing manpower, equipment and researcher infrastructure.

Targets for Support

- > Companies conducting joint researches with KITECH
- > Companies in need of technology transfer from KITECH
- > Companies needed to utilize prototype production facilities and research equipment
- > Those who are approved as being acknowledge as necessary

Details of Supports

Facility supports	Equipment supports	Supports for technologies and joint researches
Space for moving in and machine facilities	Test analysis and measuring equipment, prototype production equipment, etc.	Join technology research and development
Meeting room, shared working room		Technology guidance and advice
Basic utility (electricity, water supply)		Technology exchange meetings

Current State of Operation

Classification	Specialized areas for support	Note
Seonam Division	Advanced parts, mining industry and mold related fields	with cleanroom facility
Dongnam Division	Transporting machine-related fields such as marine robots, root technologies for molding and metal forming, and aviation	Busan, Jinju
Gangwon Division	Fields related to functional materials and three-dimensional printing	
Ulsan Division	Automobile, measuring machine, eco-friendly industry related fields	
Korea Institute for Rare Metals	Rare metal related fields	





OPEN LABS

Granting Full Access to High-End/High-Tech Equipment for SMEs

The Institute is providing technological support services such as test, evaluation and production of prototypes while assisting SMEs and medium-sized firms by opening 44 laboratories in the country so that they can conveniently use expensive cutting edge equipment.

Open Laboratories by Region

Research Institute of Advanced Manufacturing & Materials Technology

- Common laboratory of material property analysis and material testing
- Processing laboratory of casting technical support
- Common laboratory of chemical analysis
- Common laboratory of root technology analysis and assessment
- Processing laboratory of plating technical support
- Processing laboratory of digital manufacturing technical support
- Common laboratory of material and surface analysis
- Processing laboratory of heat treatment technical support
- Processing laboratory of welding and bonding technical support
- Processing laboratory of precision molding technical support
- Processing laboratory of metal forming technical support
- Common laboratory of Korea Institute for Rare Metals

Research Institute of Convergence Technology

- Common laboratory of toxic material chemical analysis
- Common laboratory of precision measurement
- Processing laboratory of industrial fibers
- Processing laboratory of fiber prototypes
- Processing laboratory for clothes technical support
- Processing laboratory of packaging technology center

Research Institute of Clean Manufacturing System

- Accredited laboratory of energy facility performance certification
- Processing laboratory of smart automation
- Common laboratory of acoustic vibration
- Common laboratory of intelligent and sustainable materials

Seonam Division

- Common laboratory of ultra-precision measurement and material property analysis
- Processing laboratory of nanotechnology integration
- Common laboratory of energy environment (RoHS)
- Processing laboratory of precision molding tryout
- Common laboratory of precision motor testing and analysis

Dongnam Division

- Common laboratory of converged plating
- Common laboratory of clean energy
- Common laboratory of casting technical support
- Common laboratory of advanced hybrids
- Common laboratory of ultra-precision processing

Daegyeong Division

- Common laboratory of Biomedical Technology Center
- Common laboratory of forming technology and advanced equipment support
- Common laboratory of system design technical support
- Common laboratory of testing and assessment support of construction equipment parts
- Common laboratory of Goryeong casting technical support
- Common laboratory of environmental testing and assessment of aviation parts
- Common laboratory of EMC

Gangwon Division

- Common laboratory of non-ferrous metals

Ulsan Division

- Common laboratory of eco-friendly sustainable technology
- Common laboratory of Ulsan root technical support

Jeonbuk Division

- Common laboratory of agricultural machine reliability testing and research center[Gimje]
- Processing laboratory of carbon lightweight materials (Jeonju)



The background of the page is a collage of industrial and technological images. At the top left, a hand holds a magnifying glass over a circuit board. In the middle left, there's a close-up of a mechanical part. At the bottom right, a circular component, possibly a lens or a sensor, is visible. The entire page is overlaid with a large, wavy, light blue shape that contains the text.

“

To respond better to the evolving technology trends and global market changes, industrial technology development at a national level is essential.

KITECH is ahead in preparing for the future by planning and proposing a national policy agenda for this and by leading the national industrial technology development initiatives commissioned by the government.

”

04

NATIONAL STRATEGIC
INDUSTRIAL TECHNOLOGY
DEVELOPMENT



INDUSTRIAL TECHNOLOGY STRATEGY DIVISION

A Think Tank for Institutional R&D Strategies in Sync with National Science and Technology Policies

The Industrial Technology Strategy Division establishes mid and long-term R&D strategies in accordance with the institutions' key missions, through which it helps solve various national and social issues with the aid of science and technology.

To respond to the collapse of global value chains in the material, component, and equipment industries and the pandemic; prevent fine dust, disasters, and damage; and adapt to AI trends (intelligentization of manufacturing), the think tank establishes institutional R&D strategies in sync with national science and technology policies.

Establishment of Mid- and Long-Term R&D Strategies in Sync with National Science and Technology Policies |

- Analysis of domestic and international issues and trends regarding science and technology policies
- Establishment of institutional R&D policies and strategies based on the strategic national industries and technologies
- Response to export regulations for the material, component, and equipment industries ● Post-COVID R&D
- Support for institutional R&D strategies to resolve national (social) issues, such as Korean New Deal

Drawing up of Mid- and Large-Scale Institutional R&D Themes and Discovery of Related Projects |

- Drawing up of research themes, discovery of projects, and irregular planning in accordance with the direction of national science and technology policies in response to industrial needs
- Analysis of R&D capabilities and composition of research personnel to conduct research in accordance with institutions' R&R ● General management of the government's and industries' responses

* National and social issues close to the public, response to export regulations for the material, component, and equipment industries, manufacturing intelligentization technology, etc.

Establishment of Cooperation Network for Application to and Expansion in Industries |

- Strategies for execution of various cooperative studies between academia and industries
- Discovery of external cooperative partners for practical application of key R&D projects into industries
- Establishment of strategies to build a cooperative relationship for research



KOREA NATIONAL CLEANER PRODUCTION CENTER

www.kncpc.or.kr

The Center of Dissemination and Facilitation of Green Manufacturing Systems

Since 1999, when the government assigned the operation of the Korea National Cleaner Production Center to KITECH, the institute has been at the forefront of developing and disseminating green manufacturing technology at the national level. The institute takes the lead to build production systems where the original source of pollution can be controlled and cleared at the stage of product design, thus, helping Korean companies overcoming trade barriers and export their products by collecting and sharing information on environmental regulations of many nations across the globe.

Spread of green management |

- Green partnership projects mutually responding to environmental, resource, and energy crisis
- Eco-innovation project for chemical management services which support SMEs together with local governments
- Establishment of industrial and environmental policies and statistics ● Awarding the prize for green industry promotion

Support for clean production |

- Expansion of technologies that reduce and control the generation of environmental pollutants in advance
- Building up of uni-material base which reduces the use of harmful materials and makes the recycling easy and supporting the development of environment mimicking products ● Development of technologies to respond to global environment regulations in advance

Facilitation of resource circulation |

- Nurturing of companies specialized in managing resources and establishing statistics on integrated national resource management ● Establishment of resource circulating technology platform and building up of base for re-manufacturing industry to nurture urban mining industry ● Establishing eco-industrial complex

Responding to environmental regulations |

- Provision of up to date information on global environmental regulations
- Establishing integrated management system of material information and operating on and offline academia for responding to environmental regulations ● Offering consultations for responding to environmental regulations





KOREA NATIONAL PPURI INDUSTRY CENTER

www.kpic.re.kr

The Center of National Ppuri Industry Promotion

KITECH runs Korea National Ppuri Industry Center as a driver of R&D and support initiatives required for promotion and advancement of ppuri industry(key industrial technologies such as processeing, forming, welding and etc) as stated in the 'Ppuri Industry Promotion and Advancement Act'. The center is making extensive efforts to build grounds for Ppuri industry development and support for competitiveness enhancement with 3 key roles of talent nurturing, industry safekeeping and economy driving.

Talent Nurturing |

- Education/training for those working in Ppuri industry
- Ppuri Industrial College nurturing/providing foreign workers
- Awards for skilled workers in Ppuri industry, Job-Fair ● New entry and lifetime career management

Industry Safekeeping |

- Announcement, legislation and revision of laws and regulations on Ppuri industry
- Statistics research, Ppuri industry event hosting ● Industrial complex value chain building
- Ppuri industry automation, advancement ● Smart plant in Ppuri industry
- Appointment and support for 'companies specialized at Ppuri technology'

Driving the Economy |

- High-tech, core Ppuri technology development ● Optimization of field process technology
- Ppuri companie's revenue increase ● Energy/environmental solution building
- Nurturing Ppuri industry for a country with high labor cost





KOREA NATIONAL INDUSTRIAL CONVERGENCE CENTER

www.knicc.re.kr

Leading the 4th industrial revolution through revitalization of industrial convergence

Now the era of convergence in which the barrier in physical space, digital space, and biological space disappears has come in earnest.
Korea National Industrial Convergence Center established in accordance with the legislation of “Industrial Convergence Promotion Act” has performing the role of control towel for the development of national industrial convergence such as industrial convergence policy planning, information service, establishment of cooperation system, and strengthening of business competitiveness.

Research on policies for industrial convergence and strategic planning |

- Developing industrial convergence policies and exploring tasks
- Establishing action plan/basic plan / strategies for the development of industrial convergence, and suggesting evaluation analysis and directions for advancement
- Analyzing industrial convergence policies and industrial statistics

Responding to industrial convergence regulations and difficulties |

- Operation of certification system for suitability of industrial convergence new product
- Operating consultation meeting for supporting certification of suitability of industrial convergence and exploring and improving industrial convergence regulations imposed to SMEs and medium-sized firms
- Activities in connection with ombudsman to promote industrial convergence

Creating new markets for industrial convergence and strengthening convergence capacities of SMEs and medium-sized firms |

- Planning new business for facilitating the industrial convergence
- Having consultation meeting and competitive show concerning industrial convergence ideas and supporting business models and commercialization for the creation of new convergence markets
- Conducting living lab demonstration project for supporting in case of advancing into market swiftly

Facilitating cultural expansion of industrial convergence and exchanges of relate organizations |

- Operating and establishing online platform to exchange information and communicate
- Holding brief sessions for industrial convergence policies in connection with related institutions and hosting contests for papers to boost industrial convergence
- Designating and operating items and leading companies for industrial convergence





KOREA INSTITUTE FOR RARE METAL

www.kiram.re.kr

Realizing the Dream of National Prosperity by Building Industrial Bases with Rare Metal

KITECH builds industrial bases of the nation's rare metal by securing a stable supply of rare metal that determines the functionality and quality of high-tech gadgets. Additionally, the institute supports the development of materialization technology to turn resources into components and circulation technology to turn rare metal waste into recyclable resources.

Establish Rare Metal Industry Policy |

- Build a master road map to achieve autonomy of rare metal resources
- Establish a comprehensive plan to support the rare metal industry and suggest promotion plans

Build Industrial Bases of Rare Metal |

- Build infrastructure to nurture and secure the competitiveness of the rare metal industry
- Secure core technology of rare metal
- build a statistical base of rare metal companies

Nurture and Support Companies Specialized in Rare Metal |

- Selective, intensive R&D support for companies specialized in materialization and circulation
- Share information by hosting technology exchange forums
- build regional network and business support

Ensure Bases Take the Lead in the Global Market by Building a Rare Metal Network |

- Establish response strategy on rare metal in the global market and global standardization to build a consistent cooperation framework
- Hold international workshops
- perform global joint research with companies that have resources or technologies





KOREA NATIONAL ENGINEERING TECHNOLOGY CENTER

www.kciec2014.blog.me

Hub of Creative Engineering Industry Development

The Korea National Engineering Technology Center has performed the role of research institute leading the activities of adding values of the manufacturing sector by nurturing manufacturing engineering industry, enhancing capacity of soft power, and nurturing talents in new industries based on creativity and innovation.

Establishment of policies for promoting creative engineering industries |

- Research on ways to promote manufacturing engineering industry
- Policy planning to nurture creative talents for researches and making strategies to nurture knowledge service industries

Creating bases for ecosystem of manufacturing innovation in the field of new industries |

- Establishing bases for dissemination and expansion of engineering SW
- Establishing infrastructure for nurturing talents for new industries and building up platforms to support manufacturing companies without plants

Finding out ways for building cooperation networks |

- Establishing private consultation group for manufacturing engineering
- Fostering mutual and cooperative relations consistently among industry, academy and research centers and forming cooperation networks between manufacturers and soft power companies



UST-KITECH School

Fostering Practical and Creative Science and Technology Talent Who Will Create Future Values for Korea



University of Science and Technology (UST) is a national research university jointly established by government-funded research institutions. It fosters creative talent through differentiated education programs focusing on problem-solving in onsite research projects. To nurture excellent talent who can contribute to the growth of industries, KITECH has been running master’s and doctor’s courses in UST-KITECH School since 2004. It has advanced research equipment and facilities and excellent professors in various fields and provides opportunities for participation in national policy projects.

Majors in KITECH School

Manufacturing Technology

The manufacturing technology major aims to nurture professionals for Korea’s key industries and industries related to the Fourth Industrial Revolution such as robots, industrial components, smart manufacturing, sustainable process, and energy system. It includes three sub-majors.

Major name	Description
Robot Engineering	Students learn robot technologies put to practical use in the field through multidisciplinary studies including mechanics, electricity, electronics, and IT.
Industrial Material and Smart Manufacturing Engineering	Students are given opportunities to understand the virtuous cycle of rare materials through studies on rare metals and ceramics and learn how to design and optimize the manufacturing process.
Sustainable Process and Energy System Engineering	Students learn sustainable material, process, and high-efficiency energy technologies essential in converting the industrial structure of Korea to a low-carbon economy for industries’ sustainable growth.

Application

* For details, visit UST’s website (www.ust.ac.kr)

Course	Doctor’s course, Master’s course, Combined course
Schedule	Fall semester (Mar.), Spring semester (Sep.)
Procedure	Application submission --> Document evaluation --> In-depth technical interview --> Announcement of successful applicants

KITECH GLOBAL NETWORK FOR TECHNOLOGY COOPERATION

The KITECH’s Compass is Pointing out to the World

KITECH supports Korea’s SMEs to stay globally competitive by building a diverse network of technology cooperation.

With the extensive support of joint research with technologically advanced nations, creating markets that are friendly to Korea and leveraging overseas outposts to support SMEs to enter foreign markets, KITECH helps products “Made in Korea” find their way across the globe.

Indonesia(Jakarta)

- Working on commercialization of technologies using local resources
- Fostering Korea-friendly business environments through technological cooperation
- Window for cooperation for government

China(Qingdao)

- 1-on-1 tailor made technological support for companies advanced in overseas markets
- Building up technology cooperation network with China’s research institutions to advance into world markets

Korea-Russia Innovation Center(Songdo, Incheon) | KRIC, Korea-Russia Innovation Center |

In charge of executing R&D projects for technology commercialization, forming a joint startup ecosystem, and providing support for Korean enterprises to enter the Russian market based on the Korea-Russia innovation platform

U.S.A(Santa Clara)

- Joint research cooperation with research institutes of the US and Canada
- Technology cooperation and business development support required for Korean companies to enhance technological competence and be able to enter global markets

Vietnam(Ho Chi Minh)

- Innovation of production technologies for small and medium sized exporting companies
- Window for cooperation for the government



