1 DAY out of 365 out of 7.300

Korea Institute of Science and Technology

Europe

20

KIST Europe

15/16

Welcome to

1 Day – out of – 365 – out of – 7.300

Some of the pictures in this annual report show scenes of an ordinary day at KIST Europe, as it could have occurred any day of the past 20 years (or 7.300 days). A timestamp guides you through the day. Enjoy!

Preface – A Greeting from the Director

Dear Readers, ► KIST Europe recently stepped into 'adulthood' as it turned 20 years old in 2016. Founded in 1996 in Saarbrucken, KIST Europe has endeavoured to accomplish the mission of establishing a bridgehead for joint research between high-technology research institutes in Europe and Korea's governmental R&D institute. Staff members of 12 different nationalities, each with a distinct background, are focusing their efforts on accomplishing our mission by extending their capabilities and expertise while exploiting the full potential of resources at their disposal.

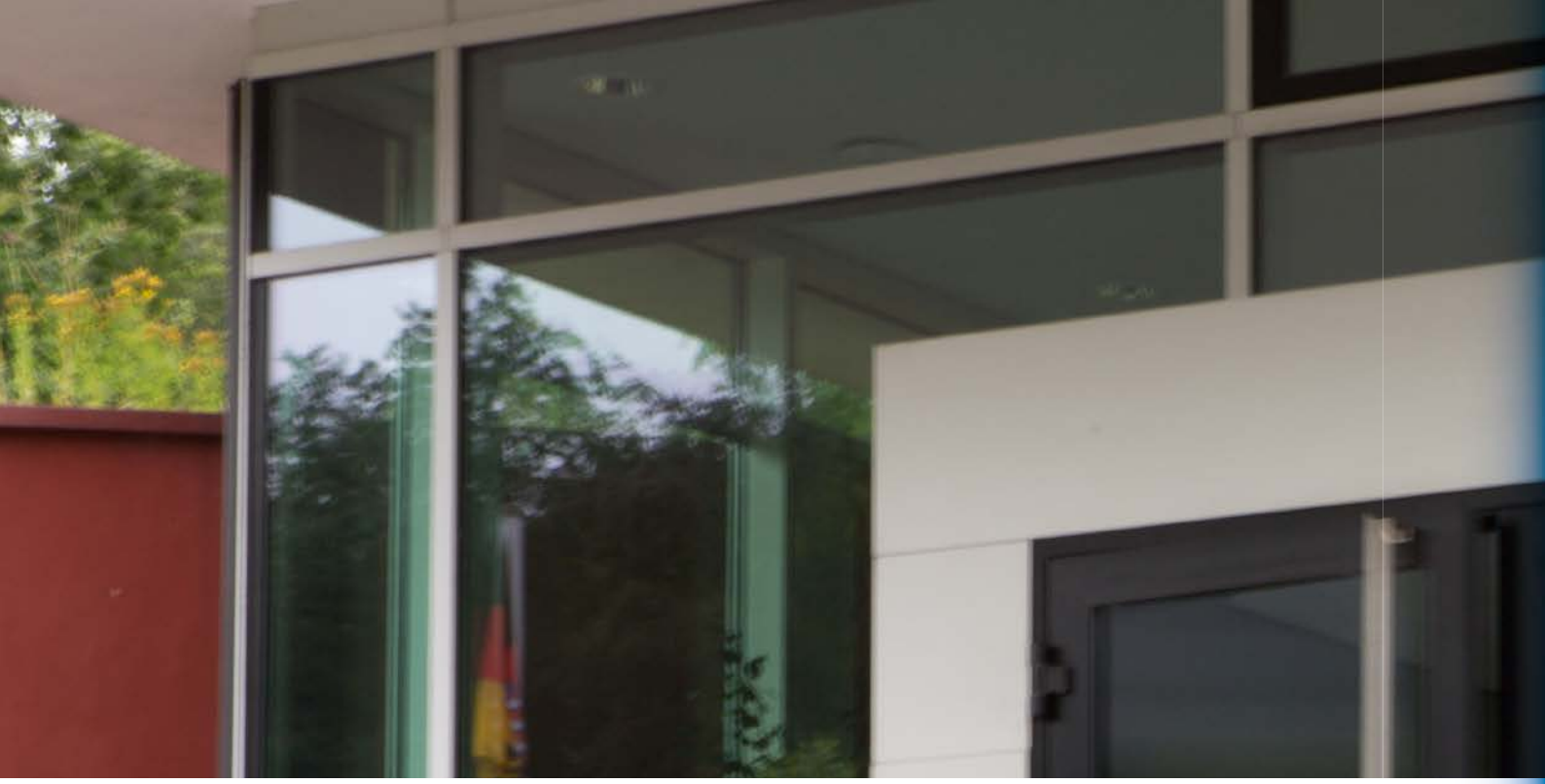
It is our pleasure to present our main research activities and notable achievements for 2015 and 2016. Our report will serve as proof of our diverse collaborative business efforts and specialised expertise in innovation-oriented research. For any individual or enterprise currently searching for a competent partner for joint research, or for those planning to expand their business into Korean or European markets, KIST Europe is the most suitable addressee for your consideration. I really do hope that you will discover the important role we have played in S&T partnerships between Korea and the EU.

Finally, I veritably wish to acknowledge all of our partners in collaboration for their consistent devotion and sponsorship, and to express my profound gratitude to the Saarland government and Saarland University for the enduring support and attention they have provided to all of us over the past 20 years. I would also like to express my genuine appreciation for all members of the KIST Europe team for their earnest and notable contributions and devotion. At 20 years of age, KIST Europe will require your continued attention and support in order to reap the harvest of its passions and efforts towards S&T. We look forward to KIST Europe's future journeys and endeavours as a young adult, strengthening its solidarity as the only Korean governmental R&D institute in Europe.

Sincerely,

Dr. Kuiwon Choi
Director, KIST Europe

Contents



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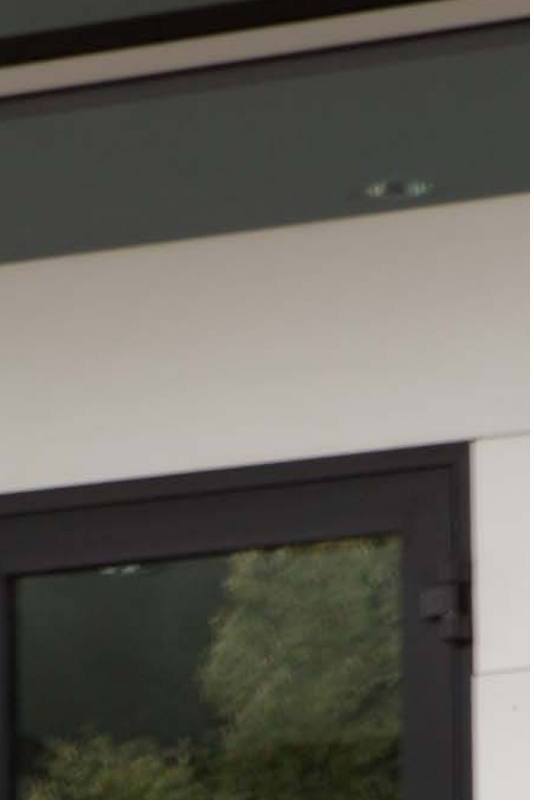

History

The only public research institute of Korea abroad!

1995 **Mutual agreement on an establishment of KIST Europe between Korea and Germany**

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1996 **Foundation of KIST Europe**

Purpose of the establishment

- Contribute to the globalisation of science and technology through joint R&D activities in Europe
- Set up a platform for promoting science and technology cooperation between Korea and Europe
- Provide technology collaboration and networking platform for Korean industries

2000 **Completion of the first building of KIST Europe**

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2006 **10th Anniversary**

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2008 **Ground-breaking ceremony for the second building construction**

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2010 **Completion of the Korea-EU cooperation building**

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2014 **Inauguration of the 7th Institute Director: Dr. Kuiwon Choi**

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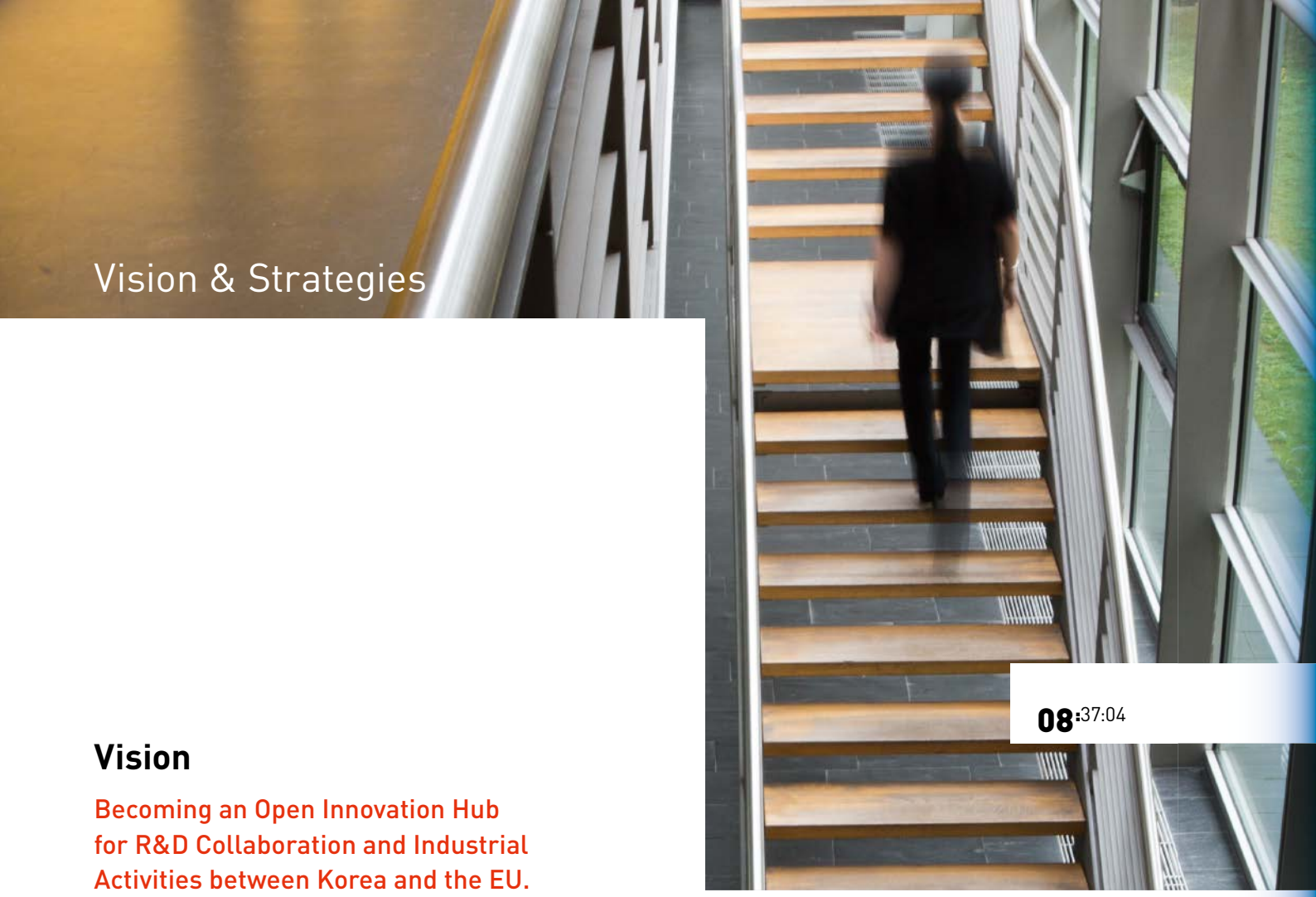
2016 **20th Anniversary of KIST Europe**



Vision & Strategies

Vision

Becoming an Open Innovation Hub for R&D Collaboration and Industrial Activities between Korea and the EU.

Strategies

Open Research

Improve R&D Competence through Selective and Focused Strategy

- Develop platform technology for global environmental regualtion compliance

Stimulate Joint R&D of Korea-EU

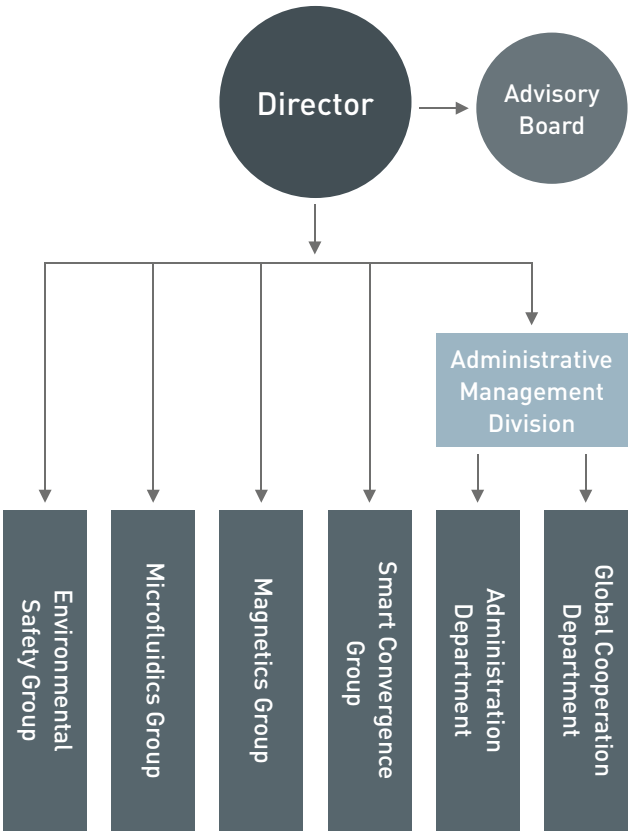
- Promote joint R&D of KIST and prominent research institutions in Korea with the EU (to allocate 35% of total R&D funds on joint R&D)

Industry Support

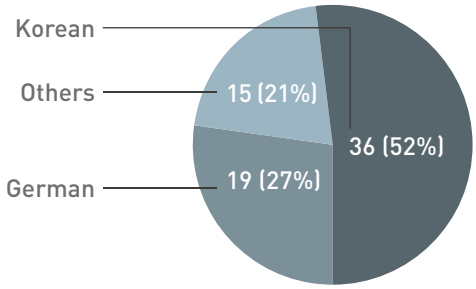
Support Korean Industry Activities in the EU

- Establish on-site technology centre, provide consultation for technology sourcing, and organise an integrated partner network
- Support chemical regulation compliance for Korean chemical industry regarding REACH and REACH-like regulations

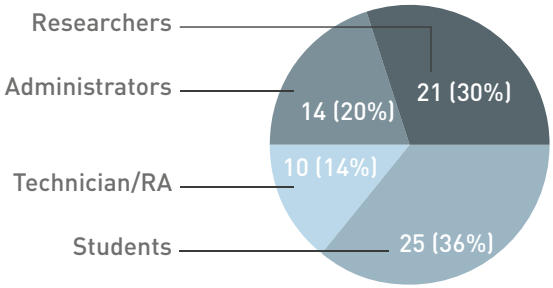
Organisation & Employees



Nationality of Employees



Number of Employees



Advisory Board Members

Chairman:

Dr. Byung Gwon Lee | President of KIST

Korean Members:

Mr. Won-ho Choi | Director General, Ministry of Science, ICT and Future Planning (MSIP)

Dr. Iee-Hwan Kim | Executive Deputy Chairman of Korea Industrial Technology Association

Dr. Kil-Choo Moon | President of University of Science and Technology

Prof. Dr. Tak Hur | Professor of Konkuk University

German Members:

Prof. Dr. Günter Fuhr | Director of Fraunhofer IBMT

MinR Christian Jörgens | Ministry of Education & Research

Mr. Jürgen Lennartz | Head of State Chancellery

Prof. Dr. Volker Linneweber | President of Saarland University

Prof. Dr. Andreas Schäffer | Director of Institute for Environmental Research, RWTH Aachen

Prof. Dr. Wolfgang Wahlster | CEO of DFKI

Location

KIST Europe

is located in Saarland University Campus in Saarbrücken, Germany. In the campus, other German prominent research institutes including Fraunhofer, Max-Plank, Helmholtz, Leibniz institutes with KIST Europe, compose a R&D cluster.

20th Anniversary of KIST Europe

KIST Europe celebrated its 20th Anniversary on May 6, 2016.

The prominent Korean and European guests from academia, industry and government graced the occasion with their presence.

To mark the 20th Anniversary, KIST Europe held a main ceremony and academic events in the fields of bioscience, environment and energy. KIST Europe's contributions to Korea-EU collaboration and achievements of its mission in past two decades were highlighted. In the main ceremony, A 'Forward Looking Vision' was announced by Director Kuiwon Choi of KIST Europe for the next decade.

KIST Europe 20th Anniversary, Main Ceremony

Main Agenda:

- Congratulatory address of prominent VIPs from Korea and Europe
- Vision announcement of director of KIST Europe
- Mutual collaboration agreement ceremony with eminent Korea-EU R&D institutions

Unveiling ceremony of KIST Europe's memorandum with articles of association and the first director's face sculpture

The Prime Minister of the Federal State of Saarland (Annegret Kramp-Karrenbauer) leaves a congratulatory note on the signature board

Celebrating 20th Anniversary of KIST Europe

- **Bio Workshop (BiKiE Symposium 2016)**
  Purpose: Support networking and S&T collaboration of primarily Korean bioscientists in various sectors within Europe, researchers from other disciplines in Europe and Korea; focusing on the subject of improving human life and society

  Contents: Future strategies of Korean bio-economy, brain science, biotechnology, cells & therapies, career advice & recruitment

  Participants: Korean bioscience experts from Europe and Korea

- **Energy Workshop: New Concept in Energy Transformation and Energy Storage**
  Purpose: Discuss energy transformation, energy storage, research topics of local research institutes and companies in Saarland, and develop joint energy projects for the near future

  Contents: Vanadium redox flow battery, PEM fuel cell, solar to chemical, organic Rankine cycle

  Participants: KIST Europe, KIST, gwSaar, Saarland University, FITT gGmbH, Mecadi GmbH

- **Environmental Workshop: Environmental Safety Technology**
  Purpose: Discuss research topics and recent challenges related to environmental safety technology and regulatory risk assessment, and develop joint projects

  Contents: Risk assessment, nanotoxicology, environmental fate of nanomaterials, sustainable environmental technology, animal alternative test, organoids, chemical regulation

  Participants: KIST Europe, University of Mainz, RWTH Aachen University, DHI, Hanyang University, University of Illinois at Urbana-Champaign

R&D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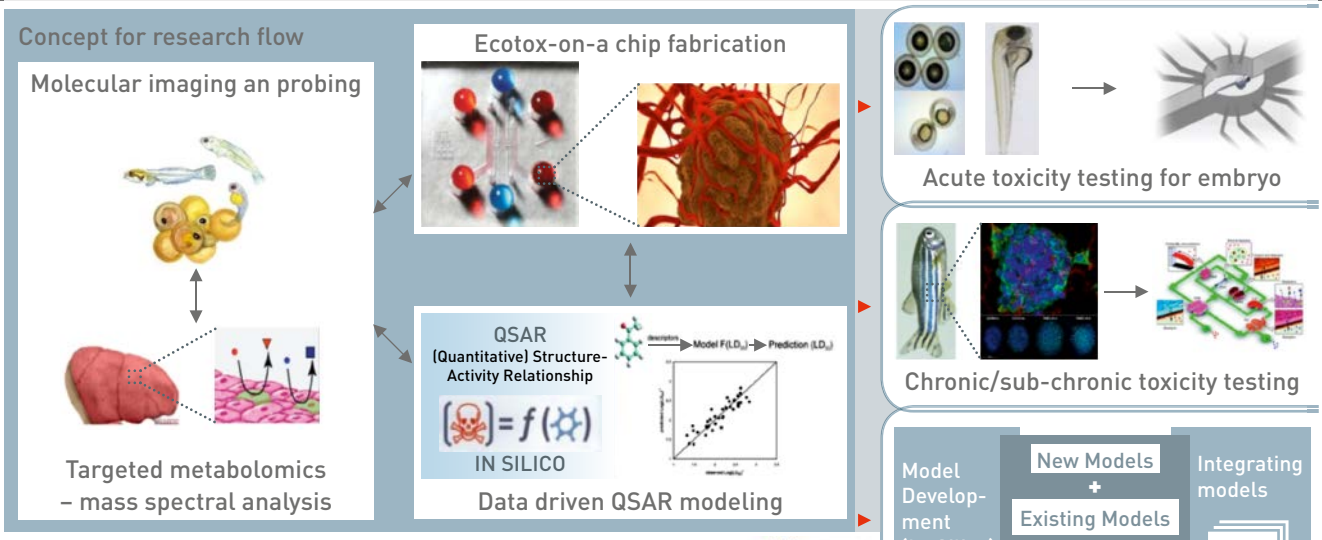
90



Dr. Sanghun Kim
Group Leader
E-mail: shkim@kist-europe.de

Environmental Safety Group

Objectives

Environmental safety group contributes to protection of human health and the environment from hazardous chemicals and mixtures of these chemicals, and to enhancing national competitiveness of chemical industry by fostering chemical trade and by ensuring high safety standards of the products.

R&D Areas

Alternative Toxicity & Ecotoxicity Assessments

- Investigation for the sources of origin and characterization of environmental pollutants and mixture
- Development of animal alternative test (AAT) system for chronic toxicity screening
- Development of environmental risk assessment tools and modelling

Computational Toxicology

- Prediction of mixture toxicity using advanced computer models
- In silico approaches as alternatives to animal tests

Development of Metabolomics and its Application in Biomarker Discovery

- Targeted/pseudo-targeted metabolomics of chemicals
- Metabolomics in biomarker discovery
- Detection and quantification of metabolites and biomarkers

Achievements 2015/16

Journals

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- Pflugmacher, S.; Kuehn, S.; Lee, S.-H.; Choi, J.-W.; Baik, S.; Kwon, K.; Contrardo-Jara V., " Green Liver Systems® for Water Purification: Using the Phytoremediation Potential of Aquatic Macrophytes for the Removal of Different Cyanobacterial Toxins from Water", Am. J. Plant Sci, (2015).
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- Jang, G.; Park, C-B.; Kang, B.J.; Kim, Y.J.; Lee, K.H. "Sequential assessment via daphnia and zebrafish for systematic toxicity screening of heterogeneous substances", Environmental Pollution, 216 292-303(2016).
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- Jeong. Y.; Schäffer, A.; Smith, K., "Application of POCIS and new mixed polymer passive sampler for monitoring organic contaminants in the river Saar and the outflow of a wastewater treatment plant", 26th SETAC Europe, Nantes, France (2016).
- Jeong, Y.; Schäffer, A.; Smith, K., "Laboratory calibration of two passive samplers for aquatic organic contaminants: POCIS and a new mixed polymer sampler", 26th SETAC Europe, Nantes, France (2016).
- Baik, S.; Jung, Y.; Kim, Y.; "Potential on the application of multi-luminescent bacteria for ecotoxicological screening of nanomaterials", 26th SETAC Europe, Nantes, France (2016).
- Jo, J.; Jeon, H.; Kim, J., "Status Quo in NanoQSARs", Nano Korea 2016, Seoul Korea (2016).
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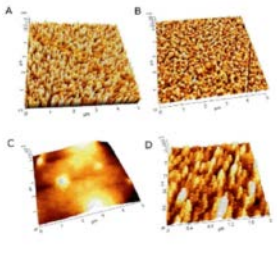

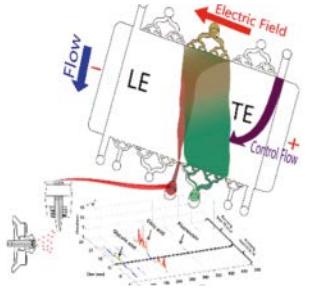

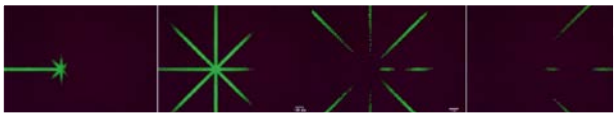

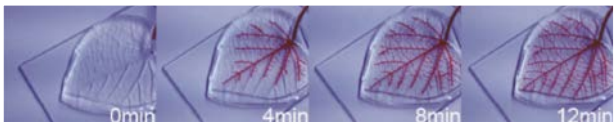

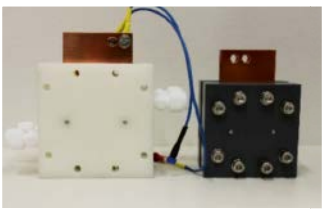

Dr. Kim, Jungtae
Group Leader
E-mail: tais@kist-europe.de

Microfluidics Group

Objectives

Microfluidics group focuses on development of bio- and environmental sensor and its microfluidic platforms. Also biomimetic microfabrication and high efficient electrophoretic analysis are being studied.

In the field of energy research, three electrochemical devices (Fuel Cell, Electrolyzer and Battery) for energy transformation and energy storage based on polymer electrolyte membranes (PEM) are the objectives.

R&D Areas

Bio- and Environmental Sensor and Microfluidic Platforms

- Ultra high efficient capillary electrophoresis
- Enzyme-based bio sensor
- Organ on a chip and Biomimetic microfluidics
- High sensitive microfluidic senor platform using FFITP
- Electro-Chemical Luminescent sensor system

Electrochemical Energy Transformation & Storage

- High temperature PEM fuel cell
- Carbon dioxide electrolysis
- Vanadium redox flow battery

Achievements 2015/16

Journals

- Wu, W.; Manz, A., "Rapid manufacture of modifiable 2.5-dimensional (2.5D) microstructures for capillary force-driven fluidic velocity control", RSC Advances, 5, 70737-70742, (2015).
- Park, JK.; Campos, CDM.; Neuzil, P.; Abelmann, L.; Guijt, RM.; Manz, A., "Direct coupling of a free-flow isotachophoresis (FFITP) device with electrospray ionization mass spectrometry (ESI-MS)", Lab Chip, 15, 3495-3502, (2015).
- Ahrberg, CD.; Neuzil, P., "Doubling Throughput of Real-Time PCR", Scientific Reports, 5, 12595, (2015).
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- Wu, W.; Trinh, K.T.L.; Lee, NY, "Flow-through polymerase chain reaction inside a seamless 3D helical microreactor fabricated utilizing a silicone tube and a paraffin mold", Analyst, 5, 1416-20, (2015).
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- Ahrberg, CD.; Manz, A.; Neuzil, P., "Palm-sized device for point-of-care Ebola detection", Anal Chem, 88, 4803-4807, (2016).
- Almeida, Av.; Manz, A.; Neuzil, P., "Pyrosequencing on a glass surface" Lab Chip, 16, 1063-1071, (2016).
- Wu, W.; Guijt, RM.; Silina, YE; Koch, M.; Manz, A., "Plant leaves as templates for soft lithography", RSC Advances, 6, 22469-22475, (2016).
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- Wu, W.; Manz, A., "Chip from nature: the rapid fabrication and selective modification of microchip directly replicated from natural leaves, with great potential in wide range of application fields", In: Micro TAS, Gyeongju, (2015).
- Jang, M.; Kleiber, A.; Trietsch, S.; Manz, A., "Human liver cells spheroid culture in perfusion micro reactor for study of drug induced liver injury", In: Micro TAS, Gyeongju, (2015).
- Hageman, T.A.G.; Pichel, M.P.; Altmeyer, M.O.; Manz, A.; Abelmann, L., "Planar manipulation of magneto-tactic bacteria using unidirectional magnetic fields", In: Micro TAS, Gyeongju, (2015).
- Ahrberg, C.D.; Manz, A., "Droplet based protein thermal shift assays", In: Micro TAS, Gyeongju, (2015).
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Book

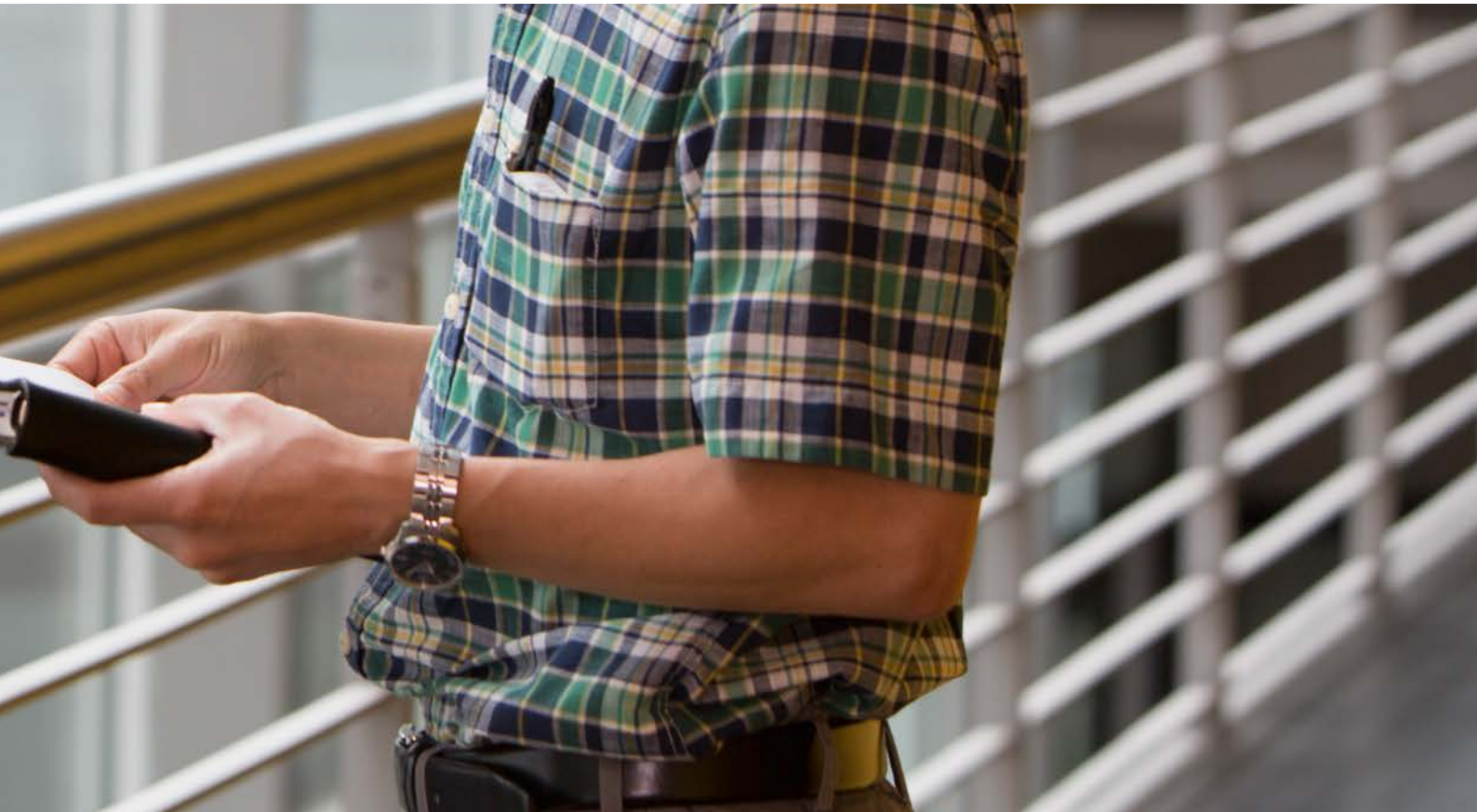
- Ahrberg, C.D., "Virtual reaction chambers as a tool for polymerase chain reaction and protein thermal shift assays", (2016).

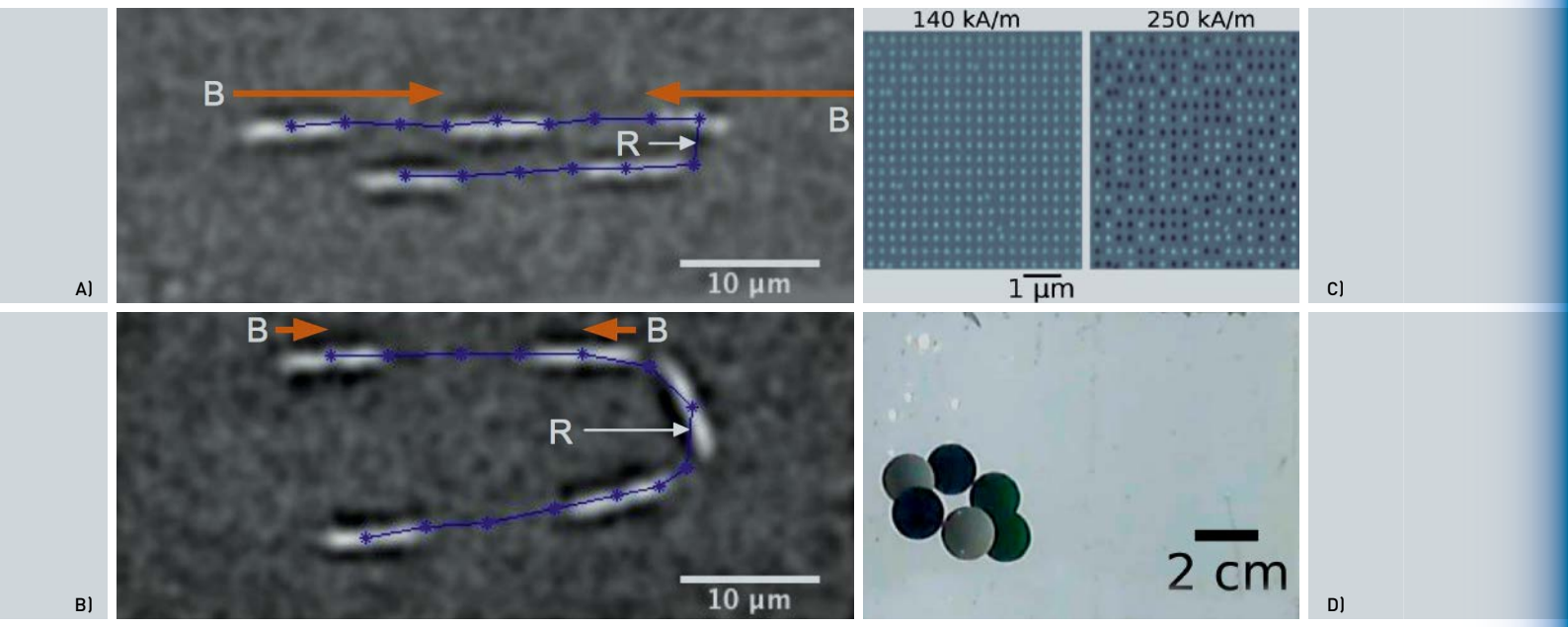
Patents

- A method of operating a real-time polymerase chain reaction system (PCR) as well as a device for operating the process (DE 102014108144 B4), Pavel Neužil (Dec. 2015).
- Process and master mix for quantitative real-time PCR for multiplex target nucleic acid molecules (DE 102014105129 B3), Pavel Neuzil, Christian Daniel Ahrberg (July 2015).

Awards

- 2015 National Award for outstanding Chinese Students abroad (awarded 2016), Wenming Wu, By Chinese Government, Berlin, 07 May, 2016.
- Solvay Chair of Chemistry (award 2015), Andreas Manz, International Solvay Institutes, Brussels Belgium.





A) Magneto-tactic bacteria performing a U-turn under reversal of the magnetic field.

B) When the field is reduced, the U-turn radius increases.

C) Magnetic force microscopy images of an array of microfabricated magnetic discs before reversal (140 kA/m) and during reversal (250 kA/m). The disc material is a Co/Pt multilayer with perpendicular anisotropy.

D) Self-assembly studies using 3D printed spheres with embedded permanent magnets, in an upward water flow delivering both levitation and disturbing energy to the system.

Prof. Dr. Leon Abelmann
Group Leader
E-mail: l.abelmann@kist-europe.de

Magnetics Group

Objectives

Magnetism combines well with lab-on-a-chip analysis systems, because magnetic fields penetrate in most aqueous solutions and hardly interact with bio-chemical processes. We combine magnetic fields with microfluidic systems to study fundamental behaviour of magnetic particles in solutions, or non-magnetic particles in magnetic solutions and to apply this with lab-on-a-chip applications for personalized medicine and clinical diagnostics.

R&D Areas

Microfabricated Magnetic Particles

- Hyperthemia for cancer treatment
- Drug delivery
- Magnetic particle imaging

Magnetically driven Bio-inspired Self-assembly

- Magnetically assisted self-assembly
- Micro and macro-scale 3D self-assembly
- Biomimetic templating by genetically engineered bacteriophages

Magnetically controlled Medical Microrobotics

- Manipulation of magneto-tactic bacteria
- Biophysics
- Environmental sensing

Achievements 2015/16

Journals

- Geerlings, J.; Sarajlic, E.; Berenschot, J.W.; Sanders, R.G.P.; Siekman, M.H.; Abelmann, L.; Tas, N.R., "Electric field controlled nanoscale contactless deposition using a nanofluidic scanning probe", Applied physics letters, 107(12), (2015).

- Krijnen, B.; Brouwer, D.M.; Abelmann, L.; Herder, J.L., "Vacuum behavior and control of a MEMS stage with integrated thermal displacement sensor", Sensors and actuators A: Physical, 234, 321-330, (2015).

- Krijnen, B.; Swinkels, K.R.; Brouwer, D.M.; Abelmann, L.; Herder, J.L., "A large-stroke 3DOF stage with integrated feedback in MEMS.", Journal of microelectromechanical systems, 24(6), 1720-1729, (2015).

- Legrain, A.B.H.; Berenschot, J.W.; Tas, N.R.; Abelmann, L., "Capillary origami of micro-machined micro-objects: Bi-layer conductive hinges", Microelectronic engineering, 140, 60-66, (2015).

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- Woldering, L.A.; Been, A.J.; Alink, L.; Abelmann, L., "Using magnetic levitation for 2D and 3D self-assembly of cubic silicon macroparticles", Physica status solidi RRL, 10(2), 176-184, (2016).

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- Yoon, J.; Korkmaz Zirpel, N.; Park, H.-J.; Han, S.; Hwang, K.H.; Shin, J.; Cho, S.W.; Nam, C.H.; Chung, S., "Angiogenic Type I Collagen Extracellular Matrix Integrated with Recombinant Bacteriophages Displaying Vascular Endothelial Growth Factors", Advanced Healthcare Materials, 5, 205–212, (2016).

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Proceedings

- Abelmann, L.; Pichel, M.; Hageman, T.; Manz, A., "Response of magneto-tactic bacteria to a rotating magnetic field Paper GI-05", In: proceedings Intermag 2016, San Diego, (2016).

- Abelmann, L.; Loethman, P.; Hageman, T.; Pichel, M.; Manz, A., "Magnetically Assisted Three-Dimensional Self-Assembly Paper EI-07", In: proceedings Intermag 2016, San Diego, (2016).

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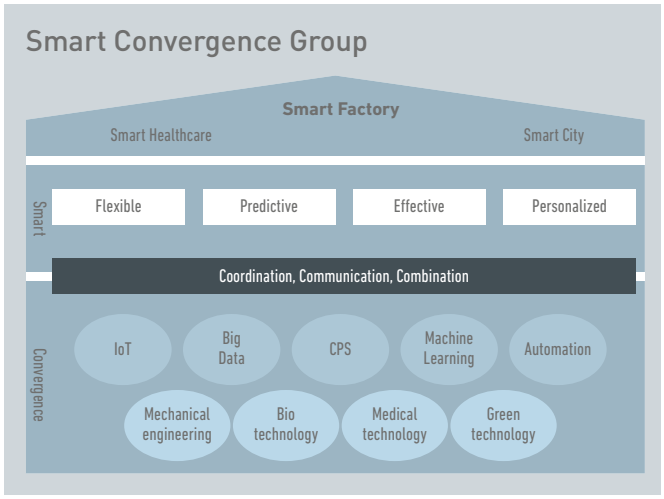
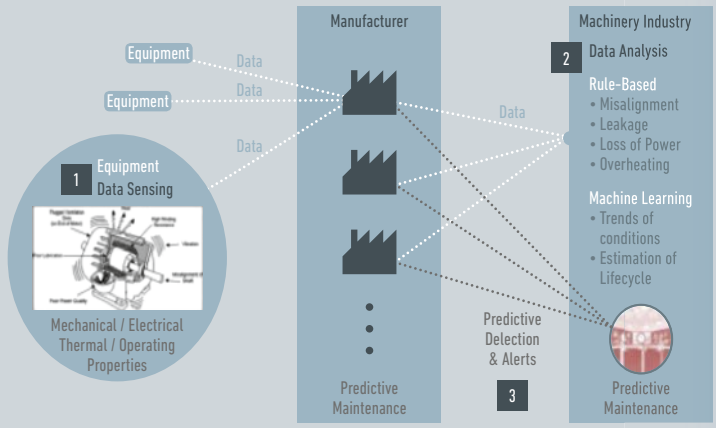
Patent

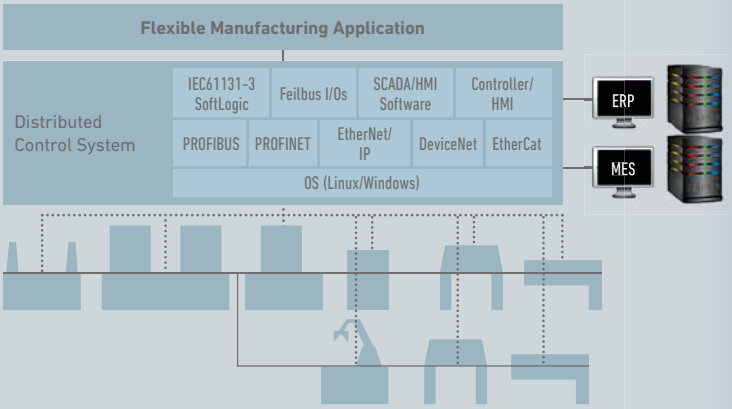
- Transport von photosensibilisierenden Substanzen mit Hilfe lebender Immunzellen zur Tumorbehandlung. (GE 10 2012 107 166, April 2015), Philippi A., Blaudszun A.-R., Schneider M. (April 2015).

Awards

- Reviewer Choice Award awarded to those posters deemed of the highest quality (top 1% of 2050 posters) by the reviewers at the annual meeting of the Biomedical Engineering Society (BMES 2015, October 7-10, Tampa, USA).







Dr. Hwang, Jongwoon
Group Leader
E-mail: hwang@kist-europe.de

Smart Convergence Group

Start 2016

Objectives

Smart convergence group contributes to novel smart applications and its enabling technologies. Currently, we are developing the key solutions for smart factory with Korean and German partners. Our next objectives are to develop these key solutions into advanced applications such as providing various Internet of Things solutions, and smart healthcare and smart city services.

R&D Areas

Future Applications and Services

- Novel smart factory / healthcare / city service scenarios
- Development of mobile and web applications

Data Analysis

- Research on data management and analysis
- Machine learning algorithms for prediction and recommendation services

Software Development

- Service-oriented architecture
- Development of control and monitoring system for factory facility and healthcare device

ETRI-KIST Europe Smart Factory Joint Research Lab

- The joint research lab was established on December 3rd, 2015 as a hub for joint research and development with Korean partners working in the subject of Industry 4.0.

  The role of the joint research lab is to introduce and promote collaborations of smart factory technologies between Europe and Korea. ETRI and KIST Europe has been developing Cyber-Physical Production System (CPPS)-based testbed in partnership.

SmartFactoryKL Membership

- KIST Europe joined SmartFactoryKL as the 47th member (the first international institution member).

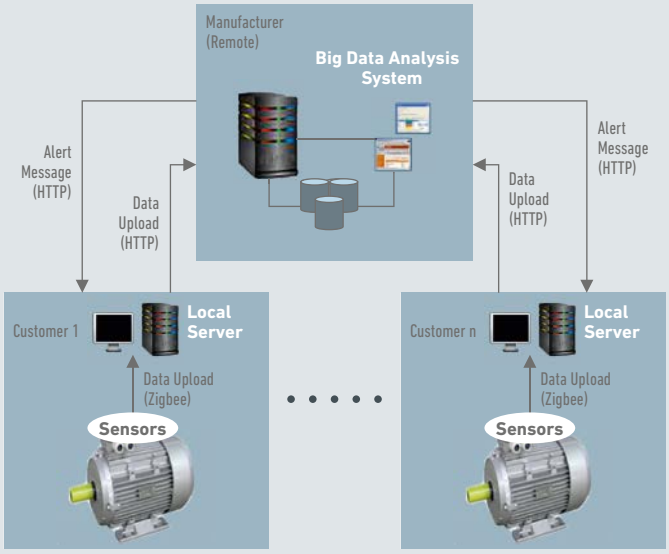
  SmartFacotryKL is the world's biggest consortium for research and demonstration platform of Industry 4.0. Smart Convergence Group aims to make contributions to upgrading the demonstrator system as well as global Industry 4.0 standard with partners.

Industry 4.0 R&D Projects

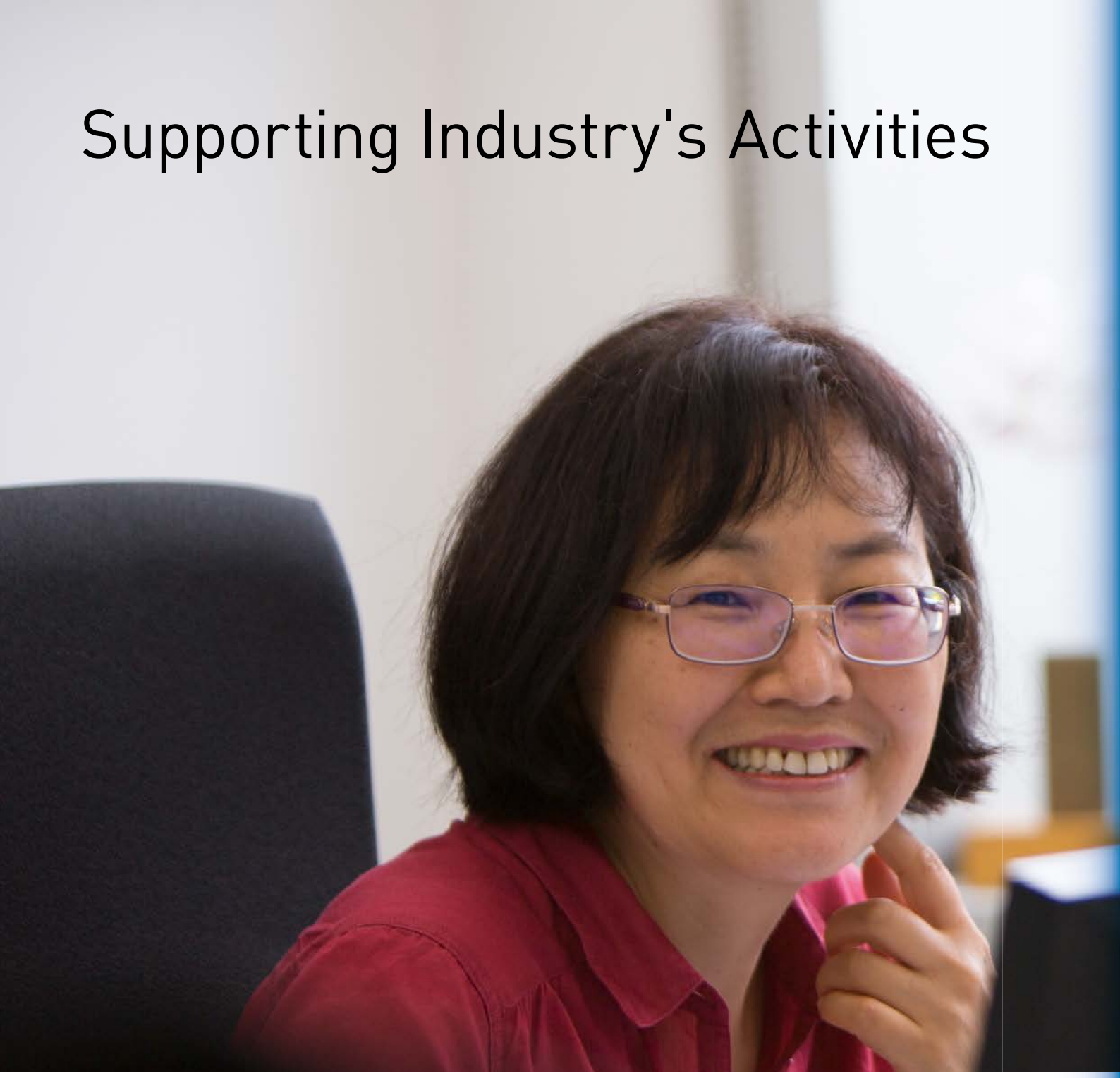
- **Remote Maintenance for Smart Customer Service in Machinery Industry:** Develop remote maintenance system to monitor machine health conditions for detection and prediction of machine faults

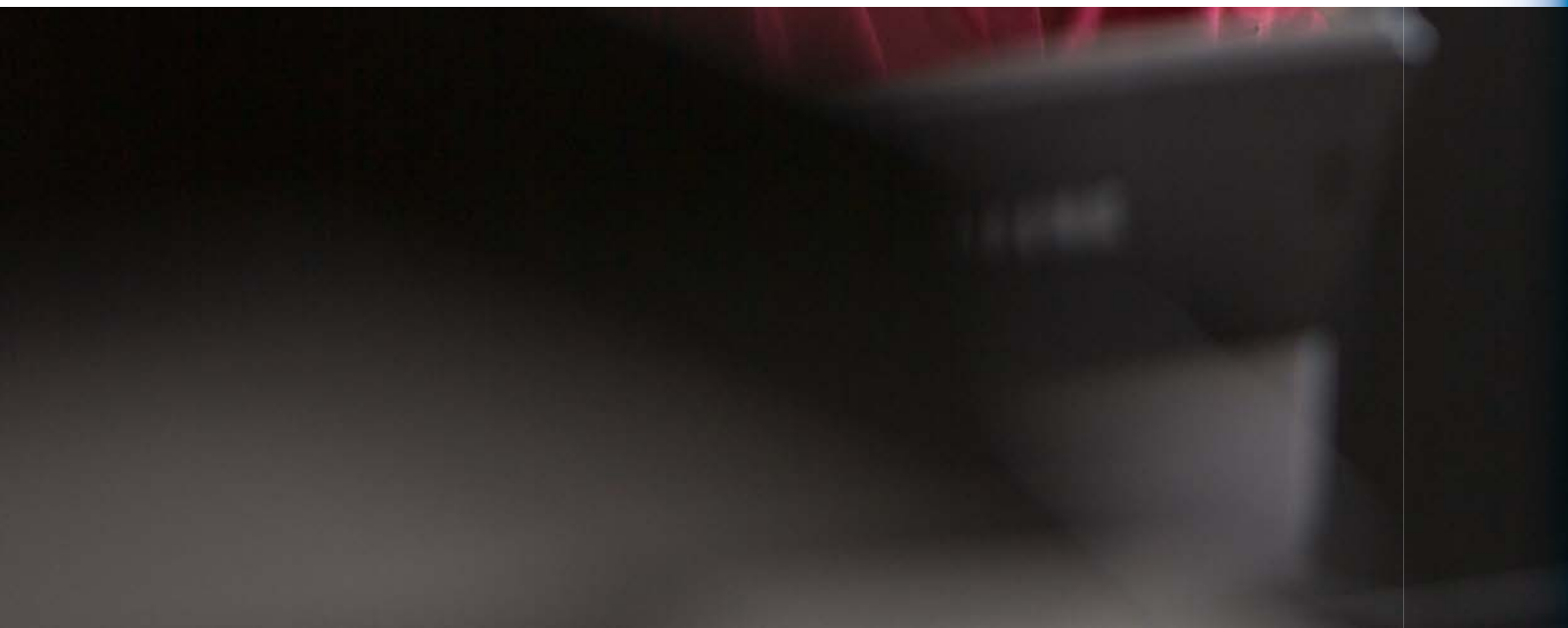
- **Connected Smart Factory (funded by MSIP):** Develop models and simulation-based CPS platform technology for the integration of virtual-real manufacturing facility

- **Development of Smart Factory Testbed (ETRI-KIST Europe Joint Research Project):** Develop Cyber-Physical Product System (CPPS) Middleware-based testbed



Supporting Industry's Activities



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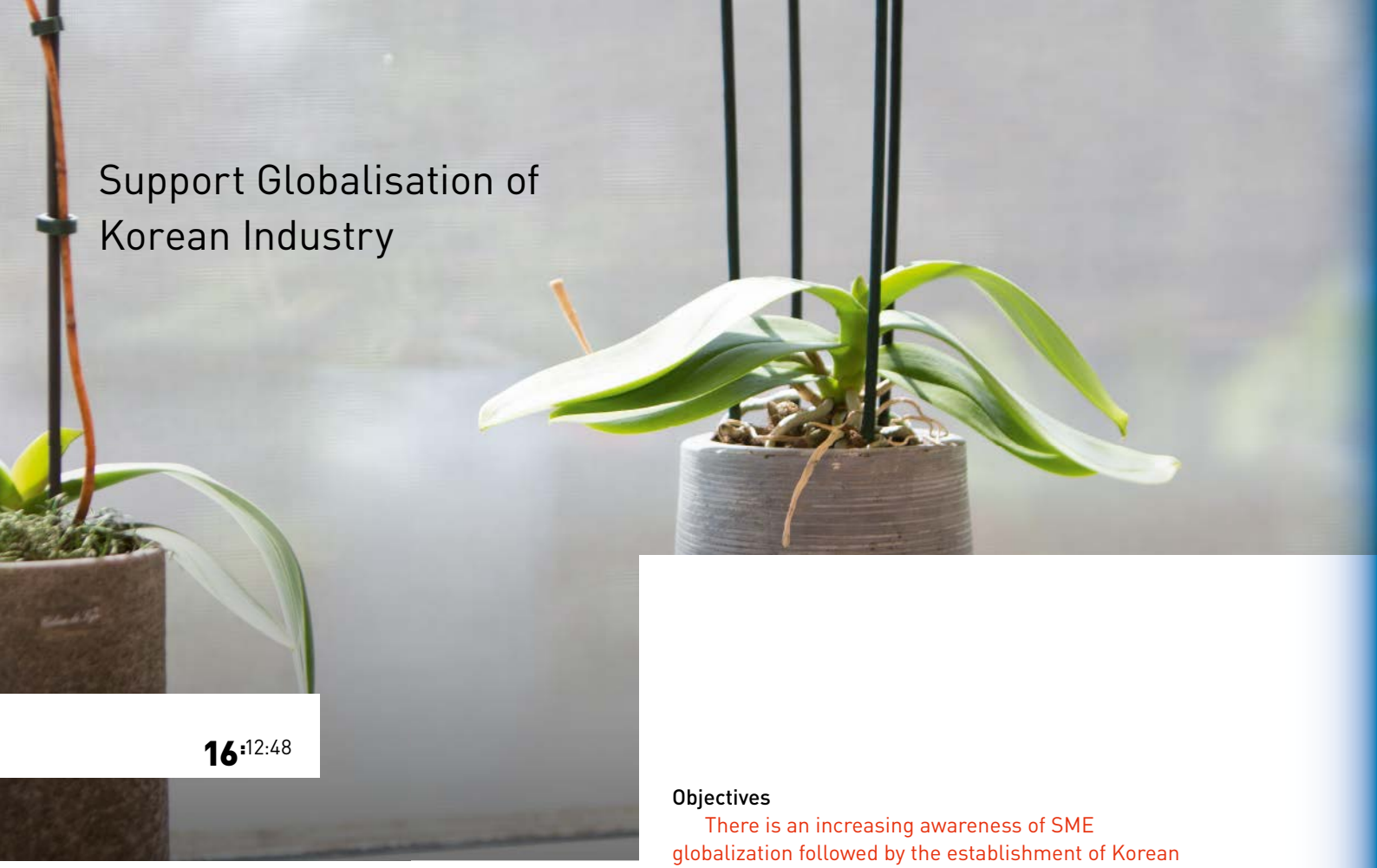


Support Globalisation of Korean Industry

Main Areas

KIST Europe fully utilizes our research infrastructure and partner network to contribute toward establishing a platform for industrial support that involves specialized organisations. The businesses of KIST Europe on the related issues are as follows;

Technical infrastructure

- Provide offices, laboratories, conference rooms, laboratory equipment and communication tools

Partner Networking

- Organise an integrated support system: involve specialised organisations to construct a system that provides a support for Korean SMEs throughout the process of globalisation

Joint R&D planning & technological consultation

- Perform technology & market analysis, joint research planning with European partners, and support technology commercialization
- Provide consultation for an establishment of a joint venture, technology sourcing, a business model in European market, and verification of technology

Industry 4.0 counterplan

- Support Korean companies targeting Industry 4.0 to develop adequate technology and strategy
- Promote open R&D with EU and German partners through providing consultation and consortium

Objectives

There is an increasing awareness of SME globalization followed by the establishment of Korean national policy: “creative economy”. The government presented numerous programs to support expansion of domestic SMEs in overseas market. As part of the governmental strategy, KIST Europe has implemented effective programs such as establishing an on-site technology centre, building a strategic alliance between enterprises, and initiating intergovernmental projects for joint technology development.

Achievements 2015/16

A) EU Nano Safety Technology Centre

Jul. 24, 2015, KIST Europe, Saarbrücken, Germany

- **Purpose:**
  Provide an advanced foundation for Korean companies targeting Nano market in EU, supported by the Ministry of Science, ICT and Future Planning (MSIP)
- **Partnership:**
  EMPA (Switzerland), KRISS, KIST Europe

B) ATCA (Advanced Technology Centre Association) CEO Workshop

September 14-15, 2015

- **Purpose:**
  Identify specific areas of cooperation and discuss the cooperation methods between ATCA and Saarland governments, research institutions, universities, and companies

  Establish networks between the ATCA member companies and German companies located in Saarland and discuss the collaboration tasks
- **Participants:**
  18 Korean companies (31 individuals from Korea) and 19 German companies and institutions

C) Hosting a seminar for KICON (Korea ICT Convergence Network) smart factory visiting group

February 3, 2016

- **Purpose:**
  Introduce German technology and strategy for Industry 4.0, and propose ways to connect Industry 4.0 to Korean Manufacturing Innovation 3.0

D) SuWAS: Sustainable Waste Management Strategy for Green Printing Industry Business (EU FP7 ECO-INNOVERA Project)

Duration: March 2013 - Feb. 2016 (36 months)

- **Purpose:**
  Establish environmental & socio-economic welfare in EU through successful adaptation of recycling technology in printing businesses with European partners

A)

C)

B)

D)

ECO-INNOVERA

Chemical Regulation Compliance

Objectives

In 2006, the European Union adopted a new chemical regulation, REACH. Similar regulations for cosmetics and food contact materials were laid. Also K-REACH was introduced in Korea in 2013 and was entered into force as of 2015. We aim to analyse, understand and provide effective solution to the international regulatory systems. By performing additional research with our approach, we can combine and facilitate scientific-based compliance to the regulations.

Main Areas

Support for Korean Chemical Industry in Europe

- **REACH-Regulation:**
  Register chemical products
  Follow-up of regulatory requirements

- **REACH-like Regulation:**
  Support cosmetic industry, food contact material manufacturers and biocidal product industry

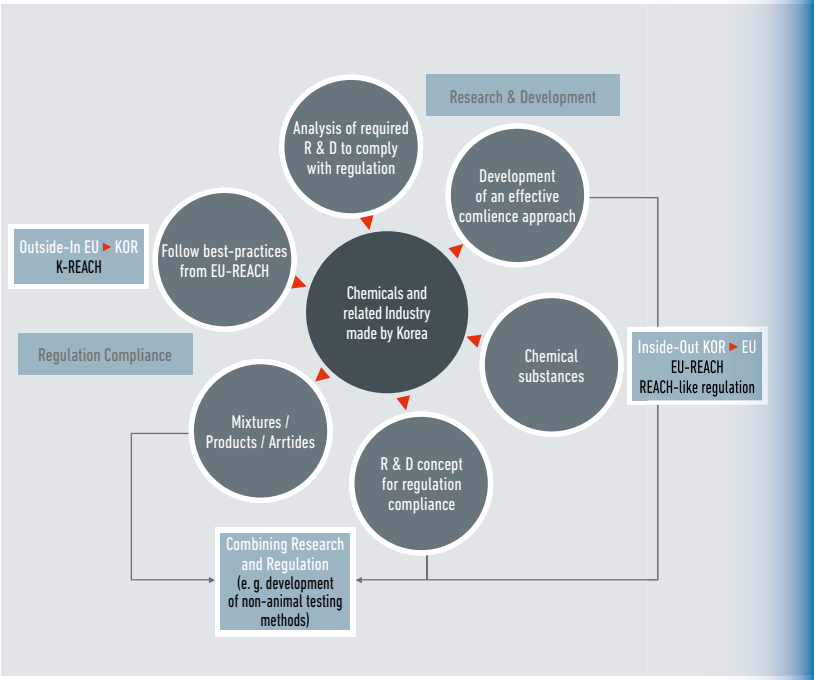
Support for European Chemical Businesses entering into Korean Market

- Become a bridge that connects European and Korean companies in the chemical market
- Provide guidance documents and guidelines
- Support for European companies in the registration process

Combining Regulation and Research

- Regulators requiring data for human and environmental safety
- Develop a new concept in combining regulation and research
- Discover new testing methods, e.g. non-animal testing

Bridging between Industry and Research



Achievements 2015/16

A) K-REACH INFODAY Workshop

Date: 17.11.2015 (Seoul), 15.03.2016 (Belgium), 09.06.2016 (Köln)

- **Purpose:**
  Support European industry to comply appropriately with K-REACH Regulation—the new legislation that has entered into force on January 1st, 2015 in Korea.

B) EU Cosmetic Regulation Compliance Workshop

Date: 03.03.2016 (Korea), 13.04.2016 (Paris), 09.06.2016 (Köln)

- **Purpose:**
  Advise Korean cosmetic manufacturing and related companies to comply with EU Cosmetic regulation
- Inform EU companies of K-REACH—the new chemical legislation in Korea
- Review difficulties and opinions including future concerns among Korean and European companies and construct future strategy to comply better with regulations

C) Workshops for Korean Nano industry

Date: 02.09.2015 (Korea), 17.09.2015 (Saarbrücken)

- **Purpose:**
  Conduct workshop in the subject of 'Global Nano safety compliances strategy for Nano industry' by MSIP (Ministry of Science, ICT, and Future Planning) and MOTIE (Ministry of Trade, Industry and Energy), and organized by KRISS, KIST Europe, NTRA (Nano Technology Research Association)
- Introduce trends in EU Nano safety, regulation compliance and Nano safety cooperation center in KIST Europe

D) Operating Help-desk for nano related companies in Nano Korea Conference

Date: 13-15.07.2016 (Korea)

- **Purpose:**
  Inform Korean companies about Nano regulation in EU, France, Belgium and Denmark through Help-desk
- Share the knowledge of Nano regulation and EU REACH with Korean companies

A)

B)

C)

D)

Global Cooperation

18:51:32

Human Resource Development

Objectives

Fostering Human Resource (HR) for innovation and creativity contributes to reinforcing excellence in innovation and derivation of imperative solutions that could address societal challenges on the Korean and European level.

KIST Europe has performed mutual academic collaboration activities for Human Resource development based on strategic partnership with prominent academic institutions between Korea and the EU.

Achievements 2015/16

Korea-EU Joint Academic Programmes

UST Generic Academic Programme for Master's and Ph.D. Course/Combined Course (since 2014)

- **Partnership:** UST, KIST, KIST Europe
- **Major:** Biomedical Engineering/ Energy and Environmental Engineering

Dual Master Degree Program

- **Partnership:** Saarland Univ., UST, KIST, KIST Europe
- **Major:** Bioinformatics/Environmental Engineering

A) Korea-EU Innovation Academy

October 6 - 17, 2015

- **Purpose:** Foster innovative entrepreneurship and expertise of Korean STI (Science, Technology and Innovation) stakeholders for mutual STI collaboration between Korea and the EU
- **Partnership:** KIST Europe, KIRD
- **Participants:** Korean STI (Science, Technology and Innovation) stakeholders, Saarland Univ. [Germany], Leipniz [Germany], Helmholtz [Germany], Rathenau Instituut [Germany], TNO [Netherlands] and VITO [Belgium] etc.

B) KCUE Global internship Program

- **Purpose:** Offer global R&D internship opportunities for Korean university students in Europe, through KIST Europe
- **Partnership:** KIST Europe, KCUE [Korea Council for University Education]

Joint HR Exchange Programme with Korean and European Academic Institutions

- **Purpose:** Enhance mutual Korea-EU academic collaboration that contributes to fostering human resources
- **Partnership:** Korean and European Universities — Seoul National University [KR], Hankuk University of Foreign studies [KR], Twente University [NL]

A)

B)

Achievements 2015/16

Establishing collaborative networking with prominent Korean and European institutions contributes to promoting mutual R&D collaboration between Korea and the EU.

C) LOI with Helmholtz Centre for Infection Research (HZI)

May 6, 2016

- **Purpose:** Establish joint research projects and research fund to promote the joint research and infrastructure.
- **Participants:** KIST, HZI, KIST Europe, HIPS

D) KRICT-KIST Europe Joint Research Laboratory

May 6, 2016

- **Purpose:** Strengthen the cooperation between KIST Europe and KRICT
- **Partnership:** KRICT, KIST Europe
- **Contents:** Exchange researchers and engage them in international research programs that allow scientific collaboration through KRICT- KIST Europe Joint Research Lab

E) EU Science Attachés Workshop

July 17, 2015

- **Purpose:** Discuss about S&T policy trends and R&D issues in Europe, OECD and Korea
- **Participants:** EU Science Attachés (Germany, France, Belgium)

EU Framework Programme/FP7 KONNECT

Project Duration: 10.2013 - 03.2017 (42 Months)

- **Purpose:** Provide evidence-based knowledge for recommending future S&T collaboration policies and programs in the EU and Korea
- **Consortium:** NRF, KIAT, DLR, NL Agency, CDTI, KIST Europe, TUBITAK, KISTEP

Korea – EU Strategic Networking

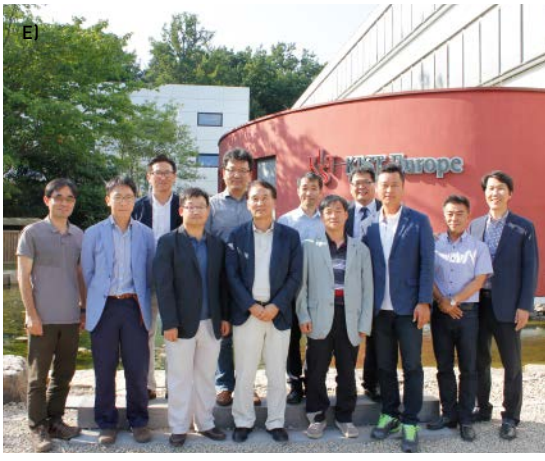
Objectives

KIST Europe has undertaken Korea-EU strategic networking activities targeting to reinforce the existing and new research partnerships, and to develop mutual R&D subjects between Korea and Europe.

Mutual networking is a key essential for S&T partnerships with Korea-EU R&D stakeholders and innovative industry partners for reciprocal Korea-EU collaboration.


C)


D)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How to find us

KIST Europe
Korea Institute of Science and Technology

KIST Europe, Campus E7.1

D-66123 Saarbrücken
Phone: +49 (0) 681 9382-0
Fax: +49 (0) 681 9382-109

From Frankfurt Airport:

By train directly from Frankfurt Airport Station to Saarbrücken Main Station by fast train (ICE/IC) or local train (RE/RB). For more information, see: www.bahn.de (English version available)

Information for the navigation system:

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  www.kist-europe.de, info@kist-europe.de

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