



Introduction to KIST School

KIST Korea Institute of
Science and Technology



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- ② KIST School and its Program





CHAPTER 1

KIST at a Glance

KIST Korea Institute of
Science and Technology

R&D History



From Catch-up
To Innovation



KIST Progressed Fast
To Claim Technology
Leadership



2000~

Research innovative,
cutting-edge
technologies

1990~

Conducted original
research in advanced
technologies

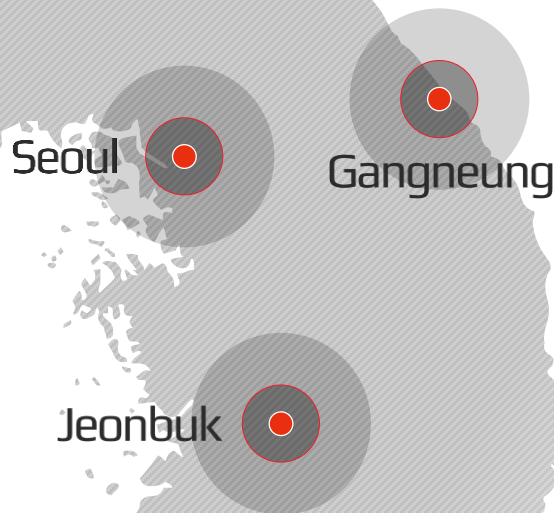
1980~

Adopted and modified
imported advanced
technologies

1966~

Developed
key industrial
technologies

Locations



Headquarters Seoul

- Established in 1966
- Multidisciplinary research institute of science and technology in Seoul
- Land area: 271,527 m²



KIST Gangneung



KIST Jeonbuk



KIST Europe German



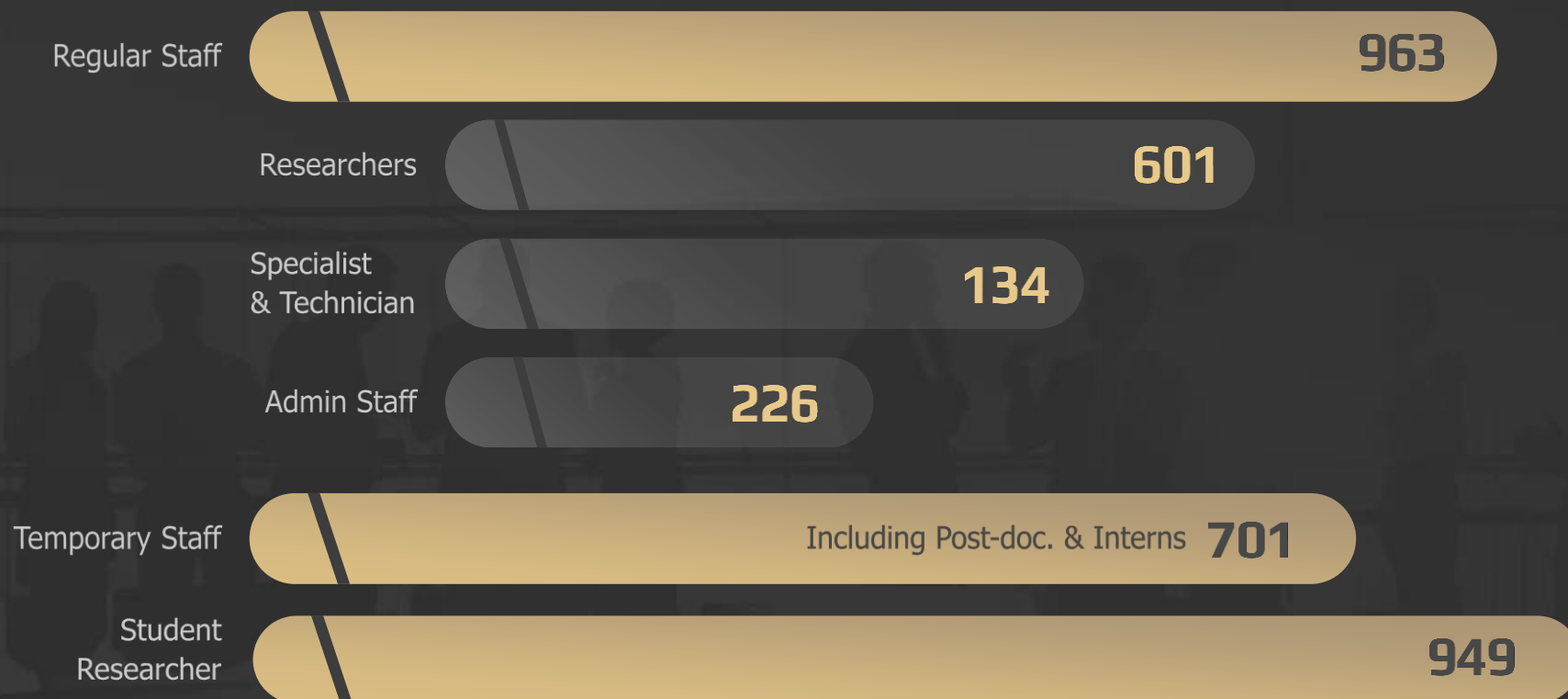
Korea S&T Center India

[The Leading Contributor in Science and Technology in Korea]

No. of Staff

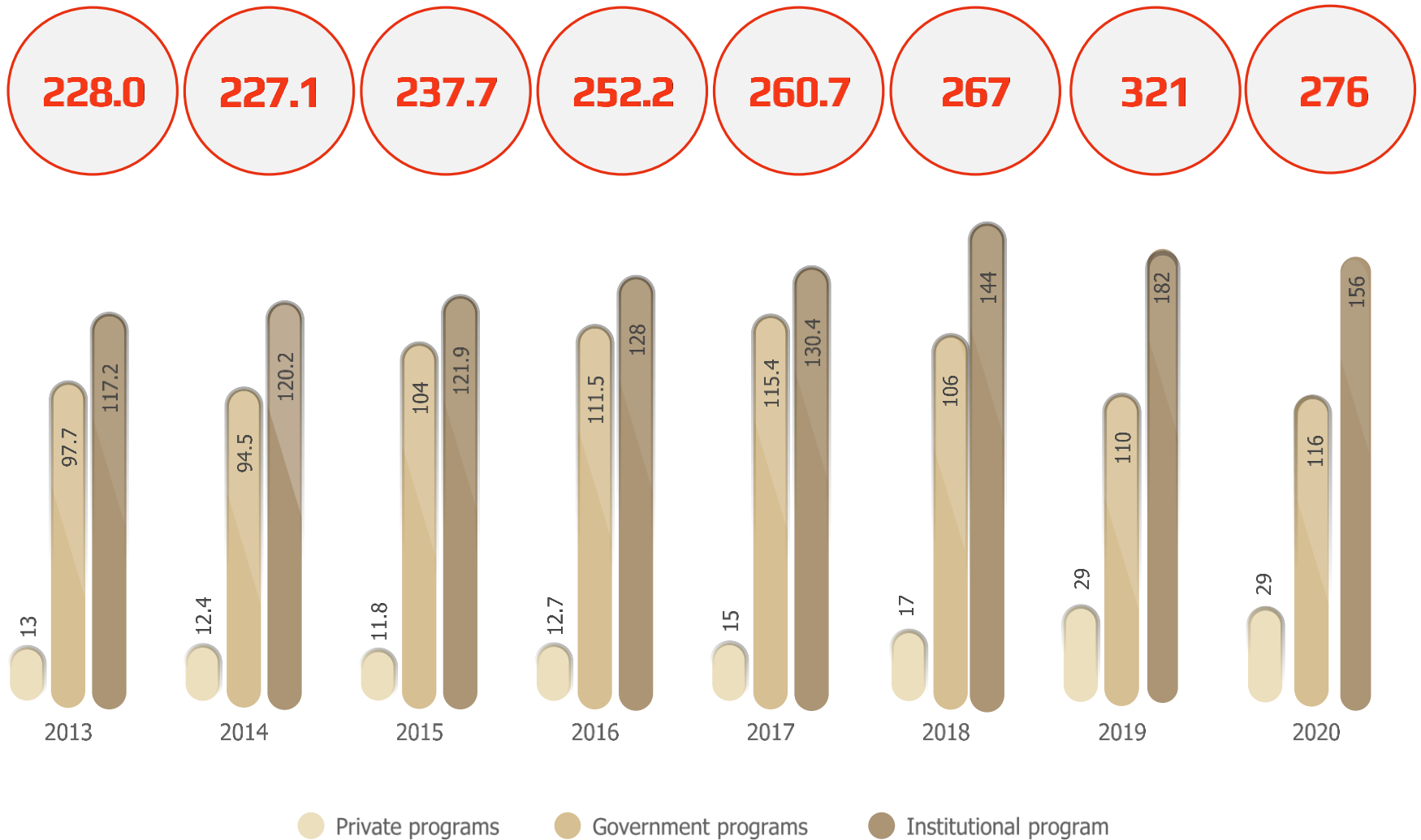
Total Staff including Temporary Staff [as of September, 2020]

2,613



R&D Budget

Budget Raising By Year [Unit : Million USD / as of 2020]



Research Institute and Divisions



Brain Science
Institute



Clean Energy
Institute



Post-Silicon
Semiconductor Institute



Robotics And AI
Institute



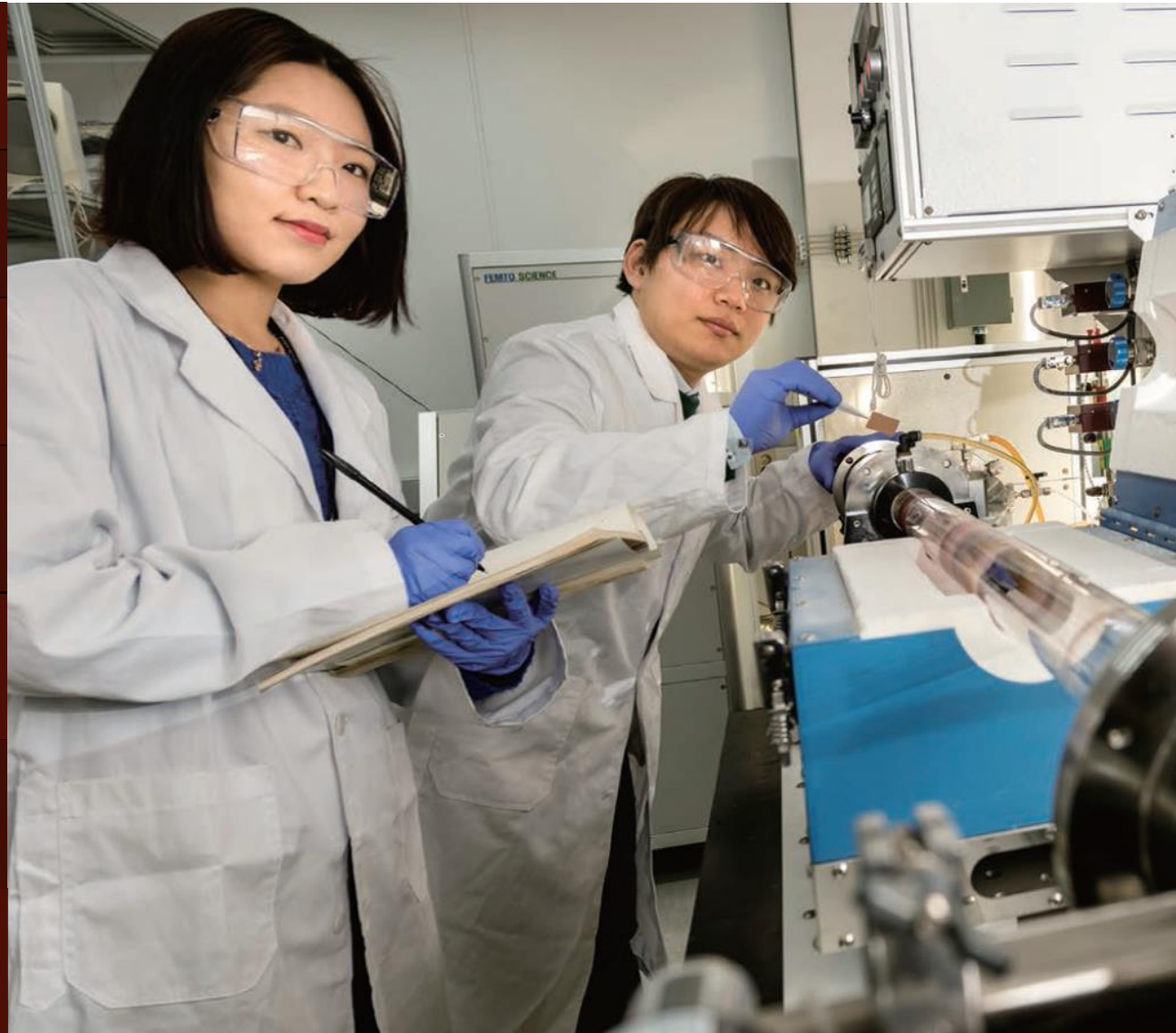
Biomedical Research
Division



Advanced Material
Research Division



National Agenda
Research Division



Notable Research Papers

NSC 4, Others 74 (2016 – 2020)

Nature

[Dr. Lee So Young, Vol. 532, 2016.4]

Nanocrack-regulated self-humidifying membranes



Science

[Dr. Koo Chong Min, Vol. 369, 2020.7]

Anomalous absorption of electromagnetic waves by 2D transition metal carbonitride Ti3CNTx (MXene)



Science

[Dr. Kim Soo Min, Vol. 362, 2018. 11]

Wafer-scale single-crystal hexagonal boron nitride film via self-collimated grain formation



Science

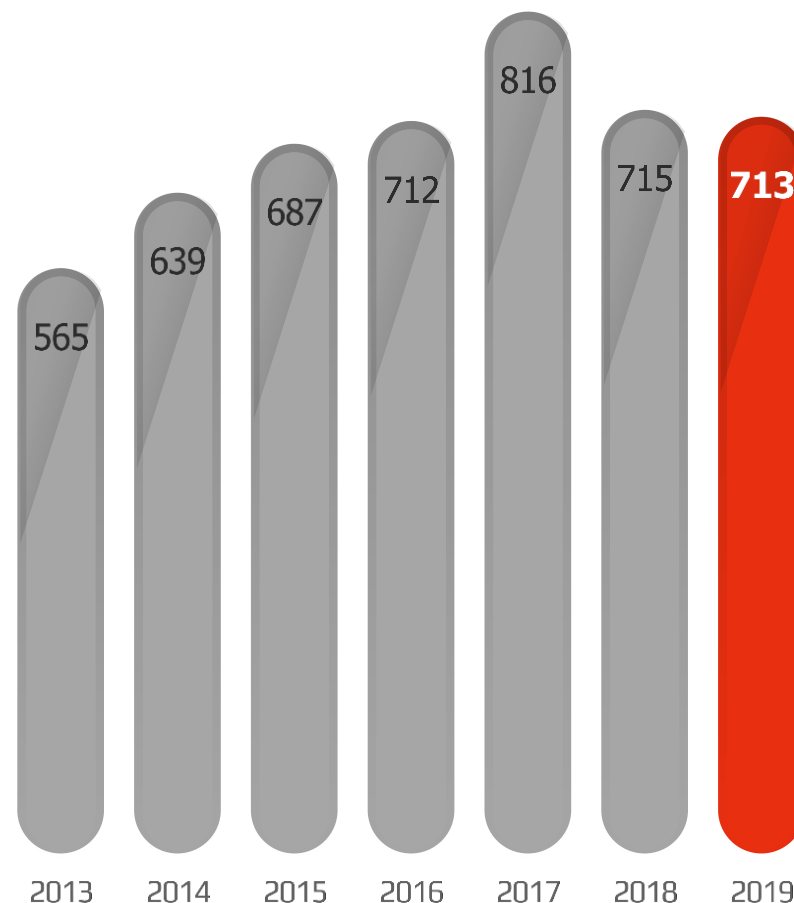
[Lee, Cheol ju, Vol. 362, 2018. 11]

Formyl-methionine as an N-degron of a eukaryotic N-end rule pathway



Ratio of JCR 20%

(Volume)



Ranked 6th among the World's Most Innovative Research Institutions

REUTERS Top 25 Global Innovators 2017 - Government

2016 Rankings		
1	Alternative Energies and Atomic Energy Commission	 FRANCE
2	Fraunhofer Society	 GERMANY
3	Japan Science & Technology Agency	 JAPAN
4	U.S. Department of Health & Human Services	 USA
5	National Center for Scientific Research	 FRANCE
6	Korea Institute of Science & Technology	 SOUTH KOREA
7	National Institute of Advanced Industrial Science&Technology	 JAPAN
8	U.S. Department of Energy	 USA

2017 Rankings		
1	Heath & Human Services Laboratories	 USA
2	Alternative Energies and Atomic Energy Commission	 FRANCE
3	Fraunhofer Society	 GERMANY
4	Japan Science & Technology Agency	 JAPAN
5	National Center for Scientific Research	 JAPAN
6	Korea Institute of Science & Technology	 SOUTH KOREA
7	Medical Research Council	 UK
8	National Center for Scientific Research	 FRANCE

(2016&2017,Thomson Reuters)

[#6 Korea Institute of Science & Technology]



CHAPTER 2

KIST School & Its Program

KIST Korea Institute of
Science and Technology

History

2017.3

Making a new leap
forward as KIST School

2011

10th Anniversary
International Conference

2003

University of Science and
Technology

2001~

KIST-International Research
and Development Academy



Mission



To educate
globalized leaders
in S&T research



To train R&D
human resource for
industries



To build advanced
education system,
improve teaching
competency and
strengthen student
abilities

KIST School



Participating in National R&D Projects

Over 90% of KIST R&D budget is from government program and institutional program \$267 million(December, 2018)



Excellent faculty

Selected professors among 800 Ph.D researchers in KIST



Utilization of National Research Institute Infrastructure

Knowledge/Technology accumulated over 50 years
Cutting-edge research equipment/facilities

Current Status



Students

● By Major

Bio-Medical Science & Technology

151

Energy & Environment Technology

77

Nano & Information Technology

73

Total
301

● By Nationality (30 Countries)

Korea	Vietnam	Ukraine	Indonesia	Pakistan	Belarus	Mongolia, Turkey	Bangladesh
151	20	18	16	14	12	8 each (16)	7
India, Kazakhstan	Egypt, Ethiopia	China, Iran, Kenya	Myanmar, Philippines, USA, Uzbekistan	Benin, Brazil, Canada, Netherlands, Romania, Rwanda, Singapore, Spain, Tanzania, Uganda			
6 each (12)	4 each (8)	3 each (9)	2 each (8)	1 each (10)			



Professors

Bio-Medical Science & Technology

69

Energy & Environment Technology

52

Nano & Information Technology

58

Total
179

as of March, 2021

Division of Bio-Medical Science & Technology

Major _____

Concentration

Biomedical
Engineering



Biological
Chemistry



Neuro-
science



Division of Energy & Environment Technology

Concentration

Energy
Engineering



Environment
Engineering



Division of Nano & Information Technology

Concentration

Nanomaterials
Science & Engineering



HCI & Robotics



Division of Bio-Medical Science & Technology

Concentration

Biomedical
Engineering



Biological
Chemistry

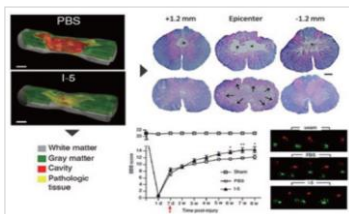
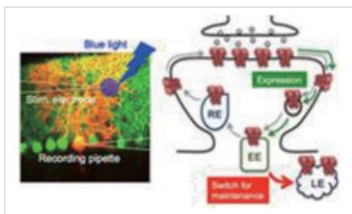


Neuro-
science



Main Issue

- Proteomics-based identification and validation of novel plasma biomarkers phospholipid transfer protein and mannan-binding lectin serine protease-1 in age-related macular degeneration(Scientific Report 2017)
- Timely regulated sorting from early to late endosomes is required to maintain cerebellar long-term depression(Nature Communication 2017)
- An injectable hydrogel enhances tissue repair after spinal cord injury by promoting extracellular matrix remodeling(Nature Communication 2017)



Division of Energy & Environment Technology

Concentration

Energy
Engineering

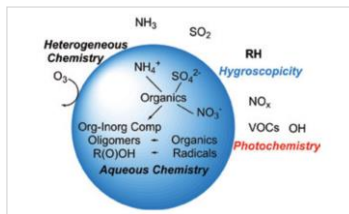
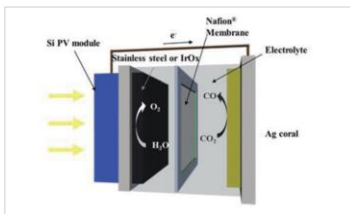
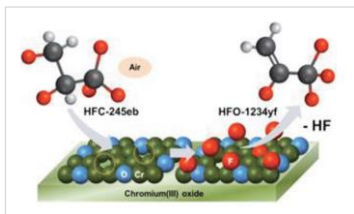


Environment
Engineering



Main Issue

- Effect of Molecular Orientation of Donor Polymers on Charge Generation and Photovoltaic Properties in Bulk Heterojunction All-Polymer Solar Cells (Advanced Energy Materials, 2017)
- Elimination of Microcystin-LR and Residual Mn Species using Permanganate and Powdered Activated Carbon : Oxidation Products and Pathways(Water Research, 2017)
- Insight into Electrochemical CO₂ Reduction on Surface-Molecule Mediated Ag Nanoparticles(ACS Catalysis, 2017)



Division of Nano & Information Technology

Concentration

Nanomaterials
Science & Engineering

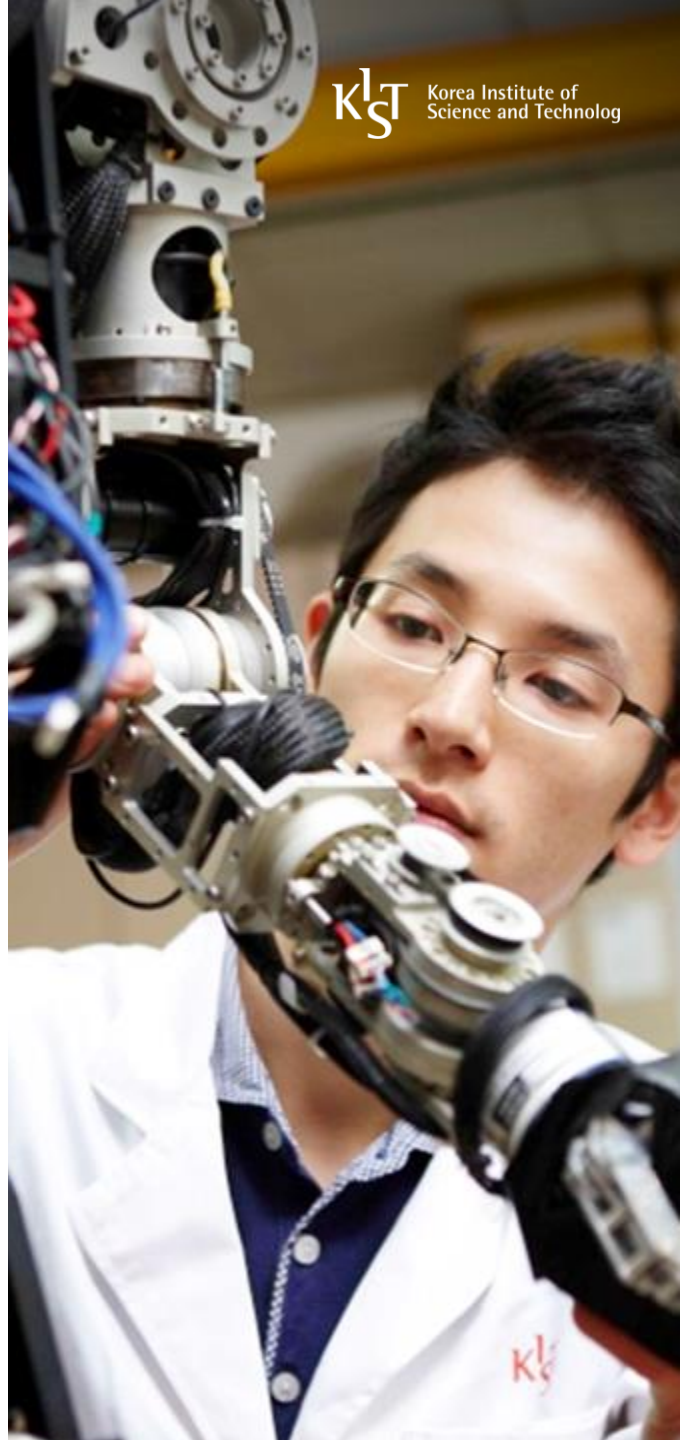
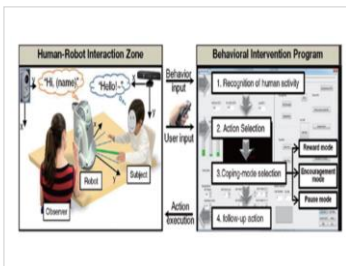
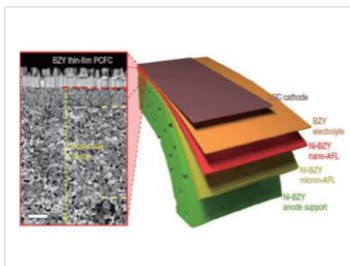
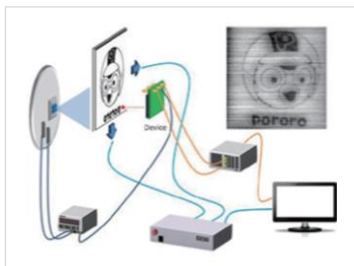


HCI & Robotics



Main Issue

- BMixed-Dimensional 1D ZnO–2D WSe₂ van der Waals Heterojunction Device for Photosensor(Advanced Functional Materials 2017)
- Demonstrating the potential of yttrium-doped barium zirconate electrolyte for high-performance fuel cells(Nature Communications 2017)
- Social Skills Training for Children with Autism Spectrum Disorder Using a Robotic Behavioral Intervention System(AUTISM RESEARCH 2017)



Programs of KIST school

Internship Program

Internship Program for UST applicants

Bachelor's Student

Master's Student

UST Degree Program

KIST School Degree Program

Master's Degree

Ph. D Degree

Integrative Course

Dual Degree Program

Student Training Program

Master's Student

Ph. D Student

Internship Program

Pre-KIST School Program

6-month-long Internship
participation in research in the lab
with Korean language course

Eligibility



- Current student of the university
- An official recommendation from the government agency in MoU with the KIST is required

Period



- Runs two times a year, begins in January and July
(Starting date can be delayed due to COVID19 quarantine)

Partners



Belarus

National Academy of Science of Belarus(NSB)



Ukraine

Ministry of Education and Science of Ukraine



Mongolia

Mongolian Academy of Science(MAS)



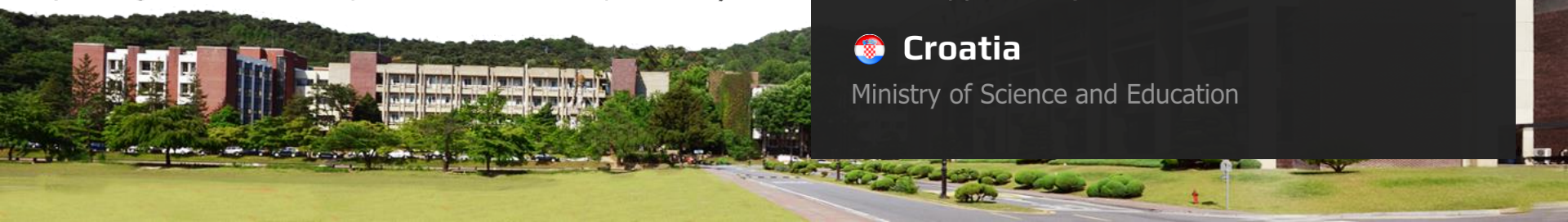
Turkey

Scientific and Technological Research Council of Turkey(TUBITAK)



Croatia

Ministry of Science and Education



UST Degree Program

To nurture S&T professionals creating future values with Gov. funded research institutes

Eligibility



- Doctoral Program : Must have a master's degree, or be expected to receive one
- Integrative Program & M.S. Program : Must have a bachelor's degree, or be expected to receive one
- Required English score: Students who have a TOEFL score of iBT 79 or higher, or other equivalent scores such as IELTS will be considered qualified

Period



- Spring Semester : Begins in March
- Fall Semester : Begins in September

Application



- Application at <http://apply.ust.ac.kr> ▶ Select KIST School

All aspects of the admission process will be dealt through the application system



UST Headquarter

KOREA **U**NIVERSITY **S**CIENCE & **T**ECHNOLOGY

The Korea University of Science and Technology(UST), established in 2003, is the only university associated with national research institutes, including KIST, that foster top S&T talents in national strategic sectors.

Dual Degree Program

Providing real research and development experience through intensive graduate Lv. education

Eligibility



- Applicants who have fulfilled their coursework requirements from Partner University will be entitled to enroll in the equivalent M.S. or Ph.D degree program at KIST School

Period



- Spring Semester begins in March, fall Semester begins in September

Partner Institution



Bulgarian Academy of Sciences



**NTUU Igor Sikorsky Kyiv Polytechnic Institute/
NTU Kharkiv Polytechnic Institute/**

- From each Institution, 2~5 Master/Ph.D. students per semester



**KIST-PASET(Partnership for Skills in Applied Sciences,
Engineering and Technology)**

Funded by World Bank

- 10 Ph.D. students studying energy and ICT in Sub-Saharan Africa/per year

Students Benefits



Full Scholarship

The highest level of financial support in Korea

To help students focus on their study and research

- Amount for a Ph.D. students
 - USD 1,500~2,100 monthly, plus tuition fee support
- Amount for a M.S. students
 - USD 1,100~1,700 monthly, plus tuition fee support
- Amount for Internship students
 - USD 900 for bachelor, USD 1,000 for master student



Student Welfare

Delicate care for student well-being

- Comprehensive insurance / Medical check
- Dormitory facilities for monthly fee of USD 120
- Diverse academic/cultural events



Korean Language Class

Communication-based curriculum of professional instructors from university

- Free Korean language classes are offered
- Various on-line and off-line classes are provided for student's adjustment in Korea and for academic life



Alumni Meeting

VIETNAM

05

CAMBODIA

THAILAND

INDONESIA



Hanoi, Vietnam



Bandung, Indonesia

Alumni Benefits

KIST School Partnership Project

To stay connected, to maintain continuous and close relationship with the alumni, and to support their research activities

Eligibility



Should be KIST School alumni members, who are incumbent university faculty members or national/public institute researchers

Period



The project begins from January, the funding term should be 12 months

Funding



The selected alumni may receive a budget of up to USD 15,000 for a project



K I S T S C H O O L

THANK YOU

KIST Korea Institute of
Science and Technology

