Introduction to KIST School

Korea Institute of Science and Technolog

Contents

Korea Institute of Science and Technolog

CHAPTER 1

KIST at a Glance

Korea Institute of Science and Technolog

R&D History

Korea Institute of Science and Technolog

From Catch-up
To Innovation

KIST Progressed Fast
To Claim Technology
Leadership

2000~ Research innovative, cutting-edge technologies

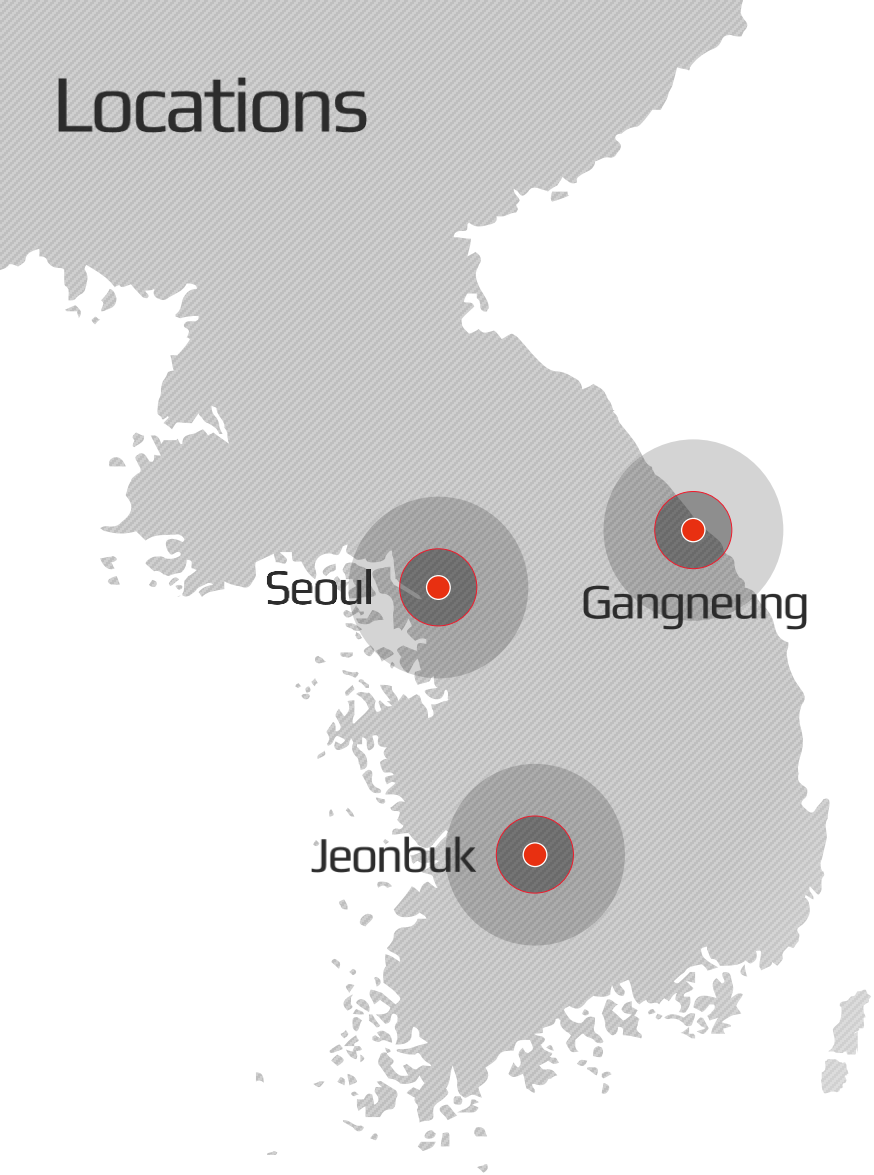
1990~ Conducted original research in advanced technologies

1980~ Adopted and modified imported advanced technologies

1966~ Developed key industrial technologies

Locations

Korea Institute of Science and Technolog



Headquarters Seoul

- Established in 1966
- Multidisciplinary research institute of science and technology in Seoul
- Land area: 271,527 m^2

KIST Gangneung

KIST Jeonbuk

KIST Europe German

Korea S&T Center India

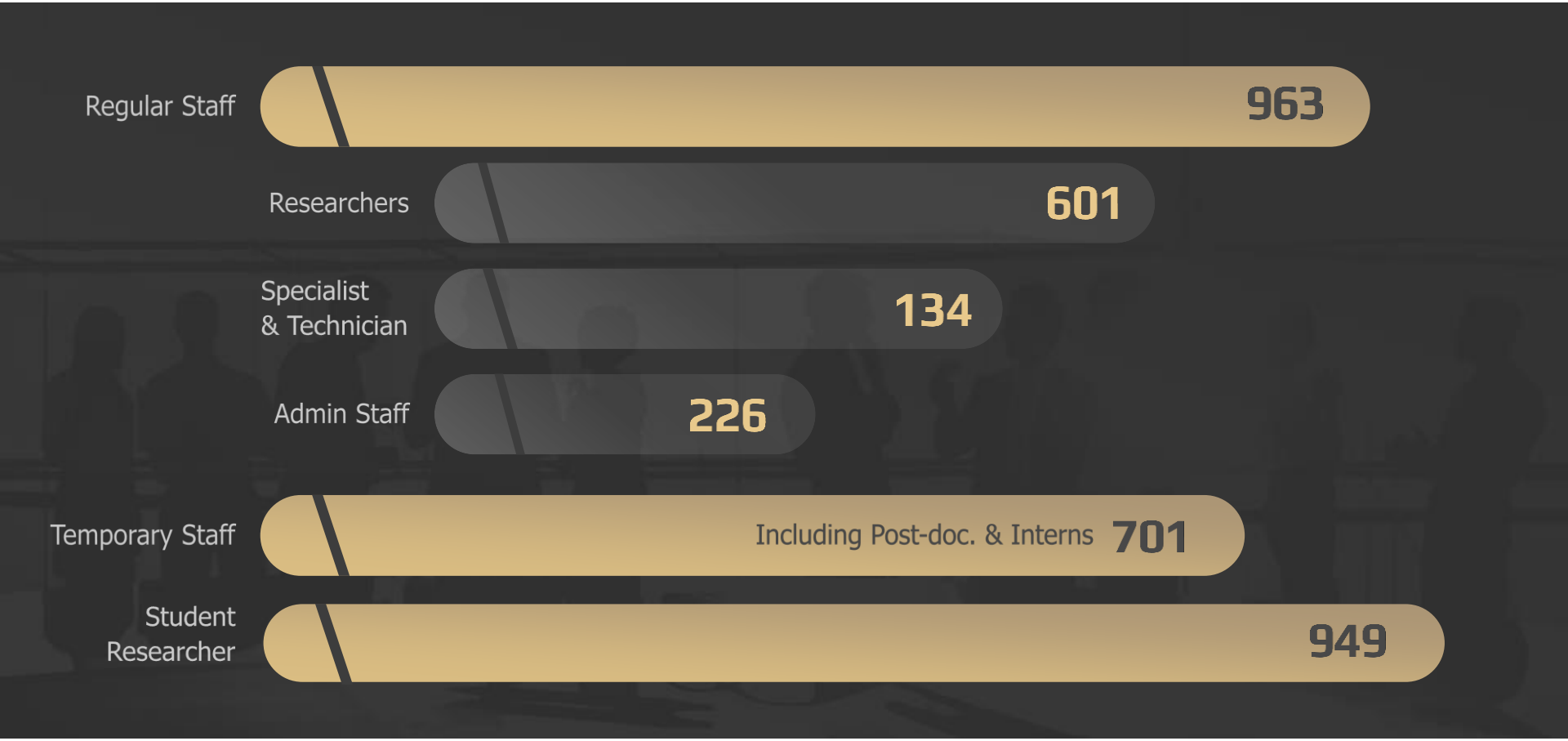
[The Leading Contributor in Science and Technology in Korea]

No. of Staff

Korea Institute of Science and Technolog

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

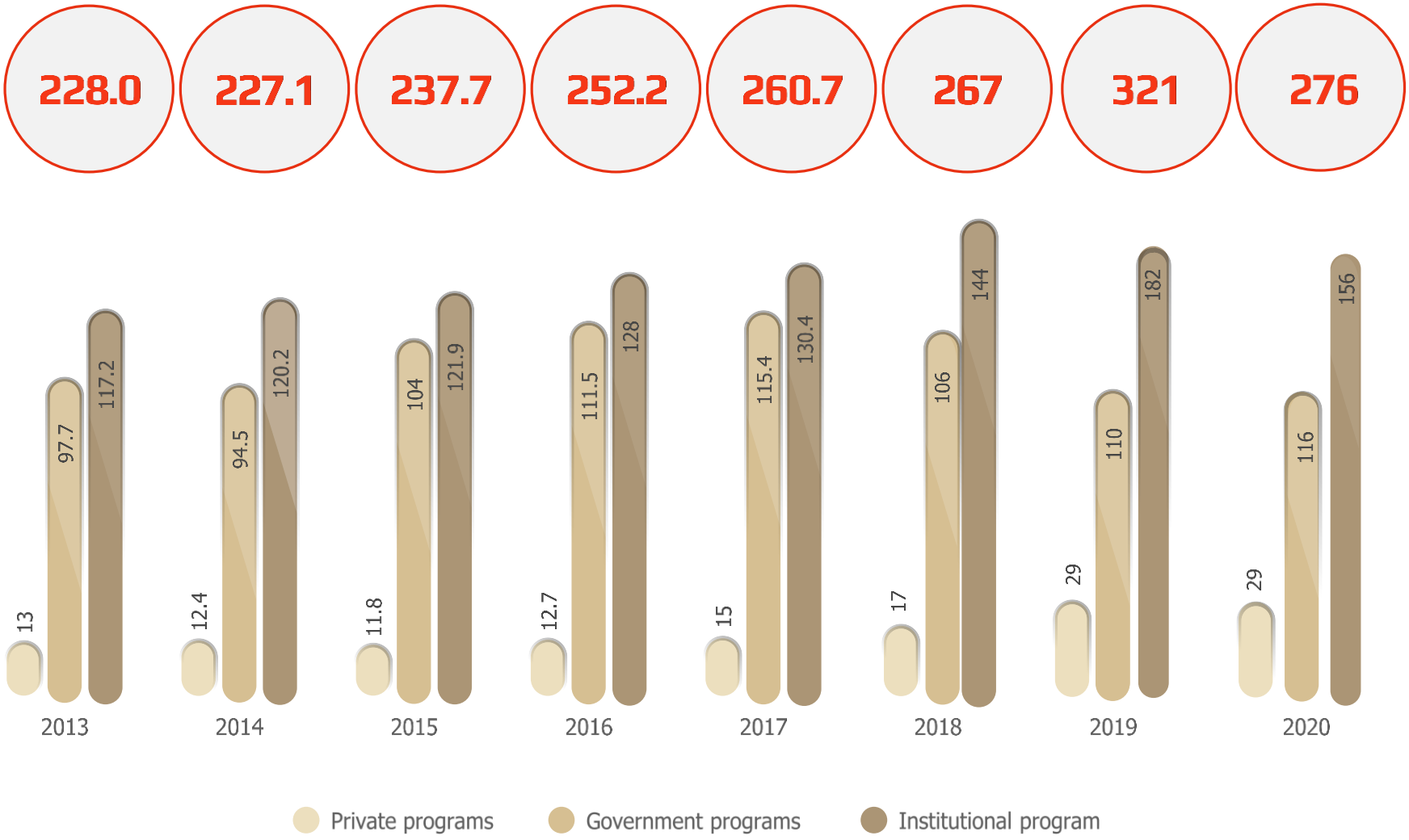
2,613



R&D Budget

Korea Institute of Science and Technolog

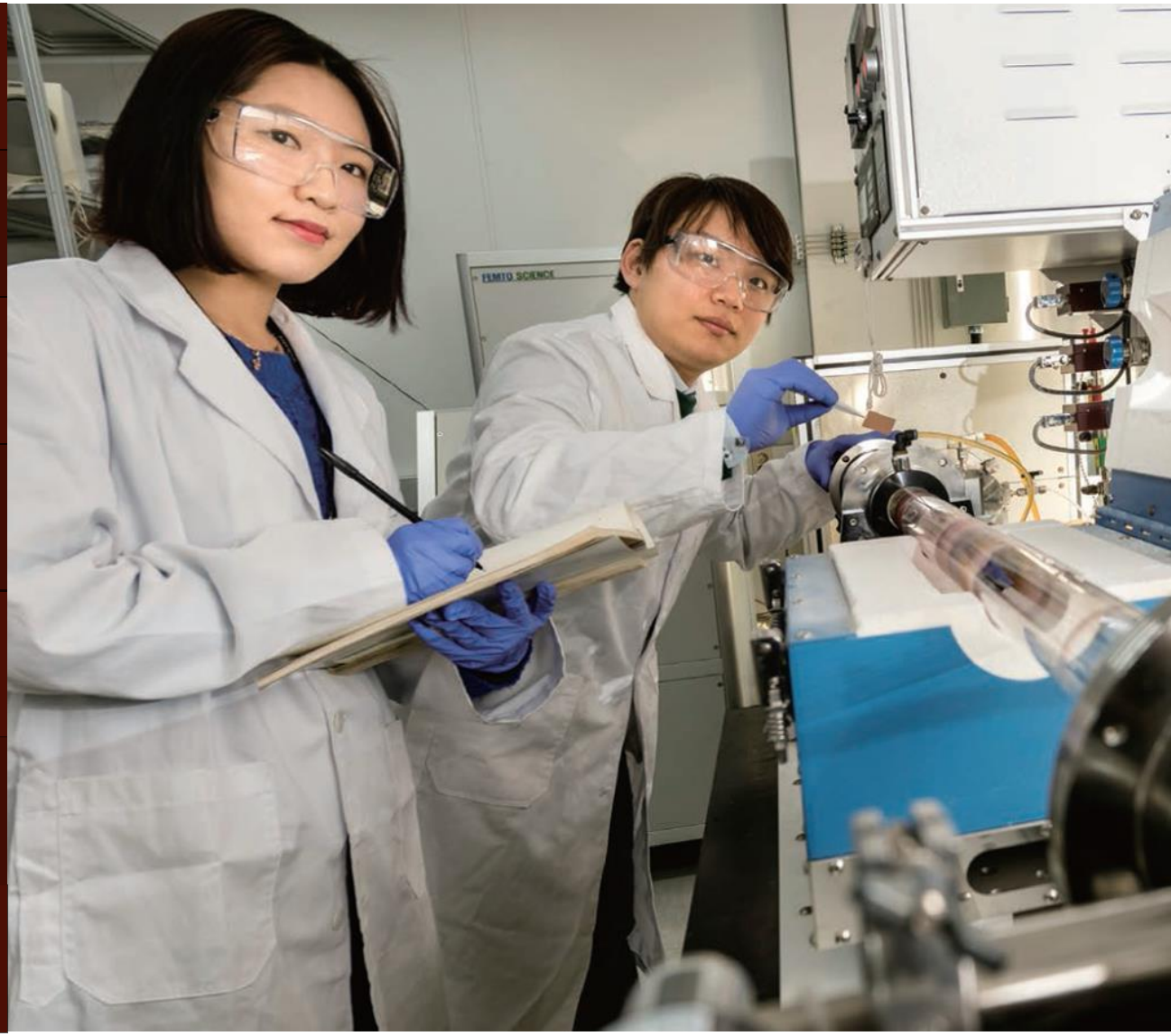
Budget Raising By Year [Unit : Million USD / as of 2020]



Research Institute and Divisions

Korea Institute of Science and Technolog

- 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

Korea Institute of Science and Technolog

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

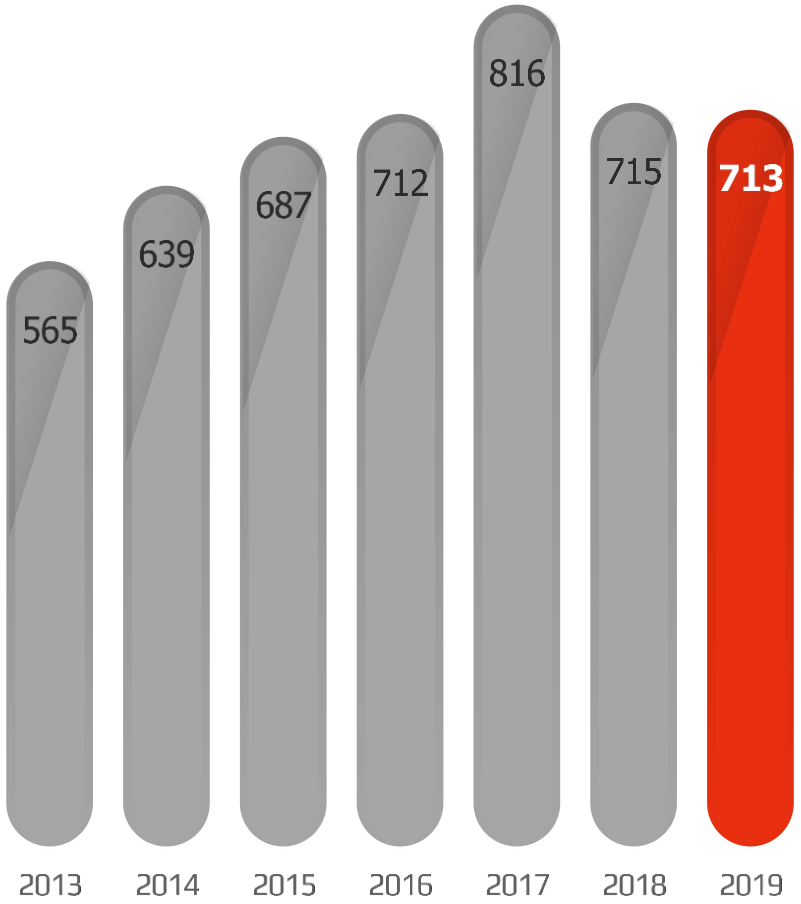
Science

[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

Korea Institute of Science and Technolog

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

Korea Institute of Science and Technolog

KIST School

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

Korea Institute of Science and Technolog

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

KIST School

Korea Institute of Science and Technolog

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

Korea Institute of Science and Technology

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

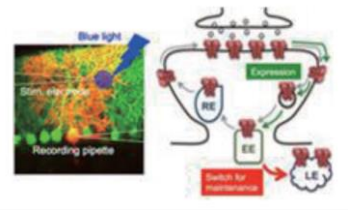
Division of Bio-Medical Science & Technology

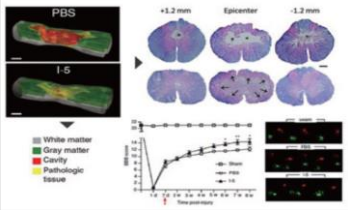
Concentration

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

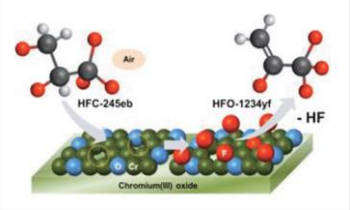
Concentration

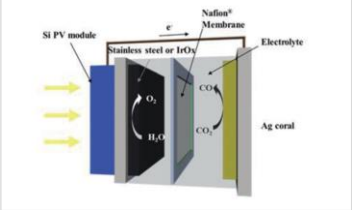
Energy Engineering

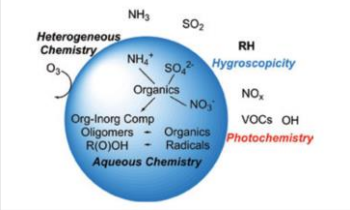
Environment Engineering

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

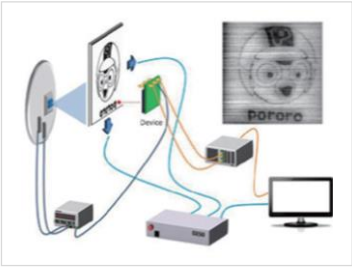
Concentration

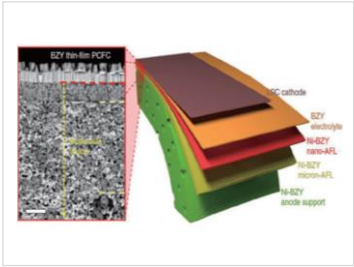
Nanomaterials Science & Engineering

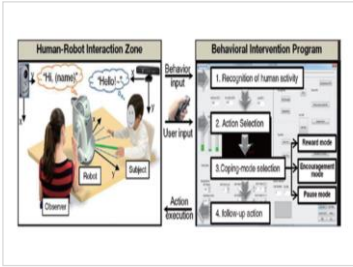
HCI & Robotics

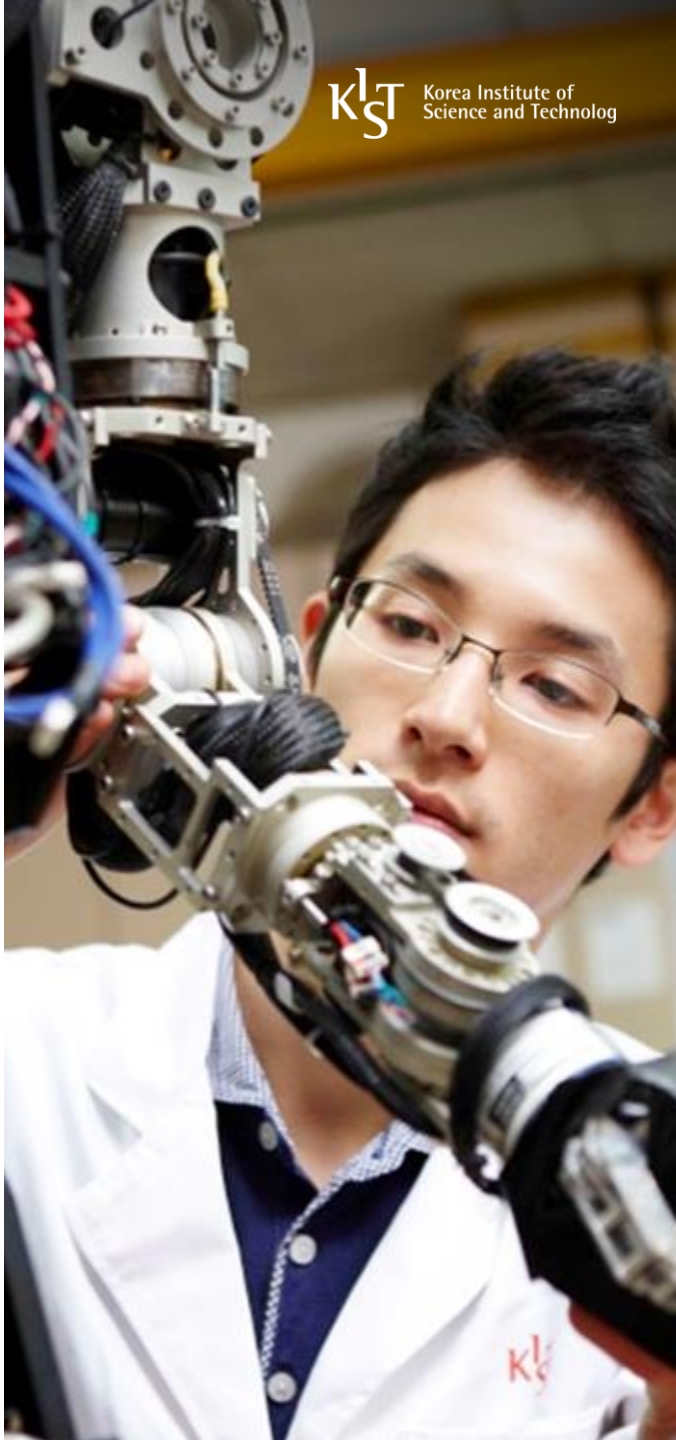
Main Issue

- 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

Korea Institute of Science and Technology

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

Korea Institute of Science and Technolog

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

KIST Korea Institute of Science and Technolog

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 UNIVERSITY SCIENCE & TECHNOLOGY

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

Korea Institute of Science and Technolog

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

KIST School

KIST Korea Institute of Science and Technolog

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

Hanoi, Vietnam

Bandung, Indonesia

KIST Korea Institute of Science and Technolog

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

Korea Institute of
Science and Technolog