

---

# **University of Science and Technology**

## **Global Research Internship 2019**

---

February, 2019



UST is proud to provide the *education system focused on a field research* that is conducted at 32 government-funded research institutes.

Outstanding researchers and high-tech facilities are contributing to notable research results.

In year of 2018, UST Ranked no.2 CWUR\* World University Rankings in Korea, no.1 in performance of papers in the fields of 3D printing and Internet of Things(IoT) in Korea.

\* CWUR: Center for World University Rankings (CWUR is a non-profit organization and has been publishing a global ranking of universities since 2012)

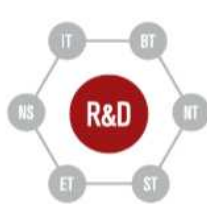


# LOCATIONS OF CAMPUSES



# KEY FEATURES

- 1** Education System Centered on Field Research at 32 Government-Funded Research Institutes
- 2** Excellent Research Environment and Facilities
- 3** Outstanding Research Performances
- 4** The Highest Levels of Financial Support in Korea



Opportunities to conduct large-scale national R&D projects (NS, IT, BT, NT, ET, ST) as a student researcher



The national research institute university funded directly by the government as a university under the direct supervision of the Ministry of Science, ICT and Future Planning (MSIP)



Outstanding research performances through the education system centered on field studies that conducts both education and research



Provision of the highest levels of financial support for students through financial aid and USD 4,500 in tuition per year

UST has accomplished superior research results based on its unique education system centered on field research.

## RESEARCH PERFORMANCE

UST Students accomplished superior research results based on its unique education system with customized field-oriented research.

\* Average Research Performance per Ph.D. researcher, as of 2017

# 4.95

No. of SCI papers per person

# 2.25

No. of SCI papers per person as the 1st author

# 3.31

Impact Factor per SCI paper

# 1.88

No. of patents

UST students have published papers as the 1st author in the most prestigious scientific journals such as Nature, Science and Cell.



- nature

**Nature,**  
published as the 1st author  
(Sep. 2010)

**Dr. Seungsub Bae** (Graduated, Spring 2015)  
UST-Korea Institute of Ocean Science and Technology (KIOST) Campus  
Majored in marine biotechnology

Title  
Formate-driven growth coupled with H<sub>2</sub> production

Contents  
Deep sea micro-organism generates own energy
- Science

**Science,**  
published as the 1st author  
(Sep. 2010)

**Dr. Boeun Yoon** (Graduated, Fall 2012)  
UST-Korea Institute of Science and Technology (KIST) Campus  
Majored in neuroscience

Title  
Channel-Mediated Tonic GABA Release from Glia

Contents  
Discovery of new function of non-neuronal cells (glial cells) in the brain
- Cell

**Cell,**  
published as the 1st author  
(Sep. 2012)

**Dr. Dongho Woo** (Graduated, Spring 2012)  
UST-Korea Institute of Science and Technology (KIST) Campus  
Majored in neuroscience

Title  
TREK-1 and Best1 channels mediate fast and slow glutamate release in astrocytes upon GPCR activation.

Contents  
Discovery of the neurotransmitter secretion process of astroglial cells in the brain

Visit our official website(<https://www.ust.ac.kr/eng.do>) for detailed information.

# UST Global Research Internship

## □ Purpose of the Program

- UST Global Research Internship aims to provide talented international students with opportunities to experience unique education system of UST centered on field research by participating in the research project at one of our campuses(National Research Institutes) as an intern.

## □ Eligibility

- Overseas Korean or Foreigner with Following Qualifications

Type	Overseas Korean	Foreigner
Nationality	Irrelevant	Foreign nationality
College	Foreign college	College in Korea or Foreign country
Academic Program	Undergraduate(junior or over)or Master' s (* no doctor' s)	
School Status	Enrolled, Leave of absence, or Graduated	
Additional Requirements	Graduated foreign high school	-
language	English or Korean	

## □ Internship Period

- July 1st to August 23rd(for 2 months)
  - If agreed by an academic adviser and a student, the term can be slightly adjusted.

## □ Benefits

Type	Details
Air Fare	Round-trip flight ticket (only for a intern from abroad)*
Documentation	Documents for visa application(if applicable)
Sickness and Accident Insurance	Same coverage as for foreign students of UST
Stipend	900,000KRW(1,200,000KRW) each month for an undergraduate(for a master' s student)
Orientation	Basic education to deepen comprehension about UST
Completion Ceremony	Sharing research results, Presentation of awards and certificates
Accommodations	May be charged for small amounts
Academic Adviser	Field research guidance by a UST faculty member
Mentor	Mentoring by a UST student or a researcher, Korean cultural experience

\* Maximum amount of air fare can be limited

## □ Program Schedule

February	Feb. 12	* <b>Announcement of recruitment</b>
March	Mar. 13~22	* <b>Submission of application at (<a href="https://globalintern.ust.ac.kr">https://globalintern.ust.ac.kr</a>)</b> - Items to fill in: Self-introduction, Academic background, Abilities, Plan for the internship, Plan after the internship, Choice of school/campus and academic advisor(up to the third choice) - Required documents: Certificate of enrollment/leave of absence/graduation of college(graduate school), Transcripts for all semesters - Additional documents for reference can be attached such as a recommendation letter from your college or English tests score. - All the submitted documents should be written in English or Korean.
April	Mar.25 ~ Apr.19	* <b>Screening</b> - The method of review may vary by selected academic advisers(document review, e-mail interview, telephone interview, etc.)
	Apr. 29	* <b>Announcement of successful applicants</b>
May~June		* <b>Preparation for the internship</b>
July	Jul. 1	* <b>Orientation at UST main office</b>
	Jul. 2 ~ Aug. 31	* <b>Field research at each school/ campus</b>
	Jul. 26	* <b>Field trip(Cultural experience trip)</b>
August	Aug. 23	* <b>Completion ceremony at UST main office</b>

## □ How to Apply

- Through online system at (<https://globalintern.ust.ac.kr>)
- ※ The online application system will be available during the application period only.
- Application Period: 20:00 p.m. Korean time(GMT+9), Mar. 13th to 22th, 2019
- Required Documents for Application: One of certificate of enrollment/leave of absence/graduation from college(graduate school if applicable), Transcripts for all semesters from college(graduate school if applicable)
- ※ Additional documents for reference can be attached such as a recommendation letter from your college or English tests score.
- ※ All the submitted documents should be written in English or Korean.
- ※ Application form includes Self-Introduction/ Academic Background/ Abilities/ Plan for the Internship/ Plan after the Internship

## □ Inquiry

- Department: Public Relations and International Affairs Team
- Person in Charge: EunJin Lee
- E-mail: [eunjinlee@ust.ac.kr](mailto:eunjinlee@ust.ac.kr)
- Telephone: +82-42-865-2374
- Address: (34113) 217, Gajeong-ro, Yuseong-gu, Daejeon, Korea
- Homepage
  - UST Global Research Internship 2019:  
[https://admission.ust.ac.kr/admission\\_eng/sub03\\_02\\_02.do](https://admission.ust.ac.kr/admission_eng/sub03_02_02.do)
  - UST Admission: [https://admission.ust.ac.kr/admission\\_eng.do](https://admission.ust.ac.kr/admission_eng.do)
  - UST: [www.ust.ac.kr/eng.do](http://www.ust.ac.kr/eng.do)

□ Participating Area, Major, Campus and Academic advisor' s Name

No.	Area	Major	School/Campus	Name of Prof.	Region
1	BT	Advanced Materials and Chemical Engineering	Korea Research Institute of Chemical Technology	Sung Yeon Hwang	Ulsan
2				DONGYEOP OH	
3				Jeyong Park	
4		Biotechnology	Korea Research Institute of Bioscience & Biotechnology	Doo-Byong Oh	Daejeon
5				BeungTae Ryu	
6		Division of Bio-Medical Science&Technology	Korea Institute of Science & Technology	Hyungmin Kim	Seoul
7				JeeHyunChoi	
8				KwideokPark (JeongjinKim)	
9				Lee Jun-Seok	
10				Junwon Choi	
11				Myung-Suk Chun	
12				Han, Seojung	
13		Kim, Yun Kyung			
14	Korean Convergence Medicine	Korea Institute of Oriental Medicine	Lee, Jun	Daejeon	
15			Kang, Youngmin	Naju	
16	ET	Advanced Energy and System Engineering	Korea Institute of Energy Research	Heeyeon Kim	Daejeon
17				Hyunuk Kim	
18		Division of Energy & Environment Technology	Korea Institute of Science & Technology	Chang Won Yoon	Seoul



19		Petroleum Resources Technology	Korea Institute of Geoscience and Mineral Resources	Seonghyung Jang	Daejeon
20				Sangheon Yi	
21		Plant System and Machinery	Korea Institute of Machinery & Materials	Park Chang-Dae	Daejeon
22		Renewable Energy Engineering	Korea Institute of Energy Research	Sungjun Hong	Daejeon
23				Lee In-Gu	
24	IT	Data & High Performance Computing Science	Korea Institute of Science & Technology Information	Buseung Cho	Daejeon
25				Kihyeon Cho	
26				Minjoong Jeong	
27		ICT	Electronics & Telecommunication Research Institute	BongKi Mheen	Daejeon
28				Joo Yeon Kim	
29				Seung-Ik Lee	
30		Industrial Technology	Korea Institute of Industrial Technology	Uendo Lee	Cheonan/ Daejeon
31	NS	Ocean Science	Korea Institute of Ocean Science & Technology	Chan-Su Yang	Busan
32				Youn-Ho Lee	
33		Bioscience	Korea Research Institute of Bioscience & Biotechnology	Eui-Jeon Woo	Daejeon
34				Cho, Yee Sook	
35		Nano Science	Korea Research Institute of Standards and Science	Tae Geol Lee	Daejeon
36		Radiological & Medico-Oncological Sciences	Korea Institute of Radiological & Medical Sciences	Kim Eun Ju	Seoul
37	NT	Nano-Mechatronics	Korea Institute of Machinery & Materials	Kim, Kwang-Seop	Daejeon
38				Seung-Mo Lee	
39				Lee, Taik-Min	

## □ Internship Openings (39 in total)

### ◦ Bio Technology

No.1			
Academic Advisor			
English Name	Sung Yeon Hwang	Korean Name	황성연
Major	Advanced materials and chemical engineering	E-mail	crew75@kriict.re.kr
Laboratory: KRICT School (Korea Research Institute of Chemical Technology)			
Introduction of Laboratory	- sustainable polymers    - bio-based polymers - renewable polymer        - biodegradable plastics		
Reference	<a href="http://sites.google.com/site/kriictbiopolymer">http://sites.google.com/site/kriictbiopolymer</a>	Location	Ulsan
Internship			
Related Majors	chemistry, polymer science and engineering		
Internship Field	Synthesis of polymers, polymer modifications, polymer processing		

No.2			
Academic Advisor			
English Name	DONGYEOP OH	Korean Name	오동엽
Major	Advanced materials and chemical engineering	E-mail	dongyeop@kriict.re.kr
Laboratory: KRICT School (Korea Research Institute of Chemical Technology)			
Introduction of Laboratory	1. Renewable polymers from biomass 2. Self healing smart materials 3. Biopolymers for biomedical applications		
Reference	<a href="http://sites.google.com/site/kriictbiopolymer">http://sites.google.com/site/kriictbiopolymer</a>	Location	Ulsan
Internship			
Related Majors	Chemistry, Polymer science, Bio-engineering, Chemical engineering		
Internship Field	Biopolymer synthesis & physics, biomedical applications, 3D printing, etc.		

No.3			
Academic Advisor			
English Name	Jeyong Park	Korean Name	박제영
Major	Advanced materials and chemical engineering	E-mail	jypark@kriict.re.kr
Laboratory: KRICT School (Korea Research Institute of Chemical Technology)			
Introduction of Laboratory	- smart materials - self healing materials - 3D printing of polymers - Nanotechnology of polymer		
Reference	<a href="http://sites.google.com/site/kriictbiopolymer">http://sites.google.com/site/kriictbiopolymer</a>	Location	Ulsan
Internship			
Related Majors	chemistry, polymer science and engineering		
Internship Field	Synthesis of polymers, polymer modifications, polymer processing		

No. 4			
Academic Advisor			
English Name	Doo-Byong Oh	Korean Name	오두병
Major	Biotechnology(Biosystems and Bioengineering)	E-mail	dboh@kribb.re.kr
Laboratory: KRIBB School (Korea Research Institute of Bioscience & Biotechnology)			
Introduction of Laboratory	Our laboratory has focused on (1) engineering of therapeutic antibodies and glycoproteins for improved potency and efficacy and (2) reconstruction of metabolic pathway by genome editing and non-viral gene delivery		
Reference	home.kribb.re.kr/dboh	Location	Daejeon
Internship			
Related Majors	Biology, biotechnology and biochemistry		
Internship Field	The internship will be involved in antibody engineering and/or genome editing of immune cells		

No. 5			
Academic Advisor			
English Name	BeungTae Ryu	Korean Name	유병태
Major	Biotechnology	E-mail	sbryu@kribb.re.kr
Laboratory: KRIBB School (Korea Research Institute of Bioscience & Biotechnology)			
Introduction of Laboratory	1. Natural rubber production from plants Identification of rubber biosynthesis gene(s), Generation of alternative rubber crops 2. Lipid signaling in plants defense responses Elucidation of a systemic mobile signal – Use as a natural vaccine to immunize plants for defense		
Reference	home.kribb.re.kr/sbryu	Location	Daejeon
Internship			
Related Majors	Plant biology, Biotechnology		
Internship Field	The internship will be involved in plant regeneration, transformation, plant molecular biology, CRISPR tech, Identification of rubber polymerase that is most commercially valuable gene in plants		

No. 6			
Academic Advisor			
English Name	Hyungmin Kim	Korean Name	김형민
Major	Division of Bio-Medical Science & Technology	E-mail	hk@kist.re.kr
Laboratory: KIST School (Korea Institute of Science & Technology)			
Introduction of Laboratory	We are focusing on developing novel non-invasive neuromodulation technique based on low-intensity focused ultrasound (LIFU), which has superior spatial resolution and depth penetrability compared to conventional techniques.		
Reference	bionics,kist.re.kr	Location	Seoul
Internship			
Related Majors	Biomedical Engineering, Mechanical Engineering, Electrical Engineering, Computer Science, Physics, Neural Engineering, Enuroscience, Biophysics, Biology		
Internship Field	The intern will be involved in the development of s/w and h/w interfaces for LIFU-mediated neuromodulation system.		

No.7			
Academic Advisor			
English Name	Jee Hyun Choi	Korean Name	최지현
Major	Division of Bio-Medical Science & Technology	E-mail	jeechoi@kist.re.kr
Laboratory: KIST School (Korea Institute of Science & Technology)			
Introduction of Laboratory	<p>The Laboratory for Computational Cognitive &amp; Systems Neuroscience investigates mechanisms underlying the activities of neuronal circuits in correlation with cognitive brain states. We are particularly interested in the emergence, development, and termination of collective behaviors across the various scales of neuronal organization, from individual neurons to functional ensembles. We combine theoretical tools such as nonlinear dynamics and statistical analysis to experimentally obtained multi-modal brain signals. In addition to conventional multi-unit and local field recordings, we emphasize the use of functional brain mapping techniques that allow us to monitor the regional activities in large area simultaneously. We use transgenic mouse model to correlate the molecular and cellular perturbation to large scale dynamics.</p>		
Reference	Computational Cognitive & Systems Neuroscience <a href="https://sites.google.com/site/jeelabhomepage/">https://sites.google.com/site/jeelabhomepage/</a>	Location	Seoul
Internship			
Related Majors	physics, neural engineering, medical sciences		
Internship Field	<p>The fields will be determined upon the interests and educational backgrounds of the candidates. Programming skills including Matlab or Python are required.</p>		

No.8			
Academic Advisor			
English Name	Kwideok Park (Jeongjin Kim)	Korean Name	박귀덕(김정진)
Major	Division of Bio-Medical Science & Technology	E-mail	jeongjin@kist.re.kr
Laboratory: KIST School (Korea Institute of Science & Technology)			
Introduction of Laboratory	<p>Our overall goal is to understand how the brain turns on and off appropriate actions. The research in our laboratory is particularly focused on:</p> <ol style="list-style-type: none"> <li>1. Elucidation the cellular and circuitry mechanism in basal ganglia output structures for action generation and termination,</li> <li>2. Examining how these circuits are affected in neurological disorders such as parkinsons' disease, Autism and Obsessive-compulsive disorder.</li> </ol> <p>Using optogenetic tools, deep grain calcium imaging and optrode recording, we aim to characterize novel circuits and cell types that are critical for action.</p>		
Reference	<a href="https://jkimlab.com/">https://jkimlab.com/</a>	Location	Seoul
Internship			
Related Majors	biology, physics, electrical engineering, computer science		
Internship Field	Internships are involved in identifying neural circuits and cell types the regulate behavioral sequencing related to autism spectrum disorders.		

No.9			
Academic Advisor			
English Name	Lee Jun-Seok	Korean Name	이준석
Major	Division of Bio-Medical Science & Technology	E-mail	junseoklee@kist.re.kr
Laboratory: KIST School (Korea Institute of Science & Technology)			
Introduction of Laboratory	<p>Chemical Proteomics Tool We are interested in the identification of protein interaction partners of small molecules. To visualize the drug-like small molecule's cellular localizations, our group developed fluorescent photo-crosslinking scaffold. This fluorescent photo-crosslinker can be attached into any functional ligands to explore cellular localization study as well as cellular interactome.</p> <p>Fluorescence Chemosensor Fluorescent organic dyes have received considerable attentions for biological imaging. There are two types of fluorescence agents for bio-imaging. First, bright fluorophores have high potential as an imaging tag for endogenous biomolecules, including protein and metabolites. In such classes of compounds, the fluorophores play roles as a signal generator to tracking the biomolecules. On the other hands, a fluorescent molecule that changes its intensity or color has a high potential as a biosensor. Our group interested in a development of novel fluorescence chemosensors for biomolecules and study the mode of actions.</p> <p>Host-Pathogen Interactions Chemical proteomics tool and chemosensors were applied in pathogenic bacteria or virus infection model to investigate the mechanism of host-pathogen interactions. We are currently particularly interested in avian influenza virus infection.</p>		
Reference	<a href="http://leegroup.chembiol.re.kr">http://leegroup.chembiol.re.kr</a>	Location	Seoul
Internship			
Related Majors	Chemical Biology (chemistry, biochemistry, cell biology, infectious disease)		
Internship Field	The internship will be involved in the development of fluorescent probe for proteomics study, fluorescent imaging probe for chemical biology study.		

No.10			
Academic Advisor			
English Name	Junwon Choi	Korean Name	최준원
Major	Division of Bio-Medical Science & Technology	E-mail	junwchoi@kist.re.kr
Laboratory: KIST School (Korea Institute of Science & Technology)			
Introduction of Laboratory	We are interested in the discovery of biological systems, particularly, post-translational modification using chemical tools and the development of novel small molecule modulators for kinases to cure cancers.		
Reference	<a href="http://www.kist.re.kr">www.kist.re.kr</a>	Location	Seoul
Internship			
Related Majors	Organic Chemistry, Medicinal Chemistry, Chemical Biology		
Internship Field	The internship will be involved in the development of small molecule kinase modulators or the development of chemical probes to study post-translational modification		

No.11

## Academic Advisor

<b>English Name</b>	Myung-Suk Chun	<b>Korean Name</b>	전명석
<b>Major</b>	Division of Bio-Medical Science & Technology	<b>E-mail</b>	mschun@kist.re.kr
<b>Laboratory: KIST School (Korea Institute of Science &amp; Technology)</b>			
<b>Introduction of Laboratory</b>	During the last 20 years, the Complex Microfluids Lab at the KIST has been consistently devoting endeavor to investigate electrokinetic microfluidics, conformation and dynamics of complex fluids (soft matter), and applications to lab-on-chips platform, closely related to either computations or experiments or both.		
<b>Reference</b>	<a href="http://poisson.kist.re.kr">http://poisson.kist.re.kr</a> <a href="https://www.researchgate.net/profile/Myung-Suk_Chun">https://www.researchgate.net/profile/Myung-Suk_Chun</a> <a href="https://scholar.google.co.kr/citations?user=yrkdTqUAAAAJ&amp;hl=ko">https://scholar.google.co.kr/citations?user=yrkdTqUAAAAJ&amp;hl=ko</a>	<b>Location</b>	Seoul
<b>Internship</b>			
<b>Related Majors</b>	Chemical Engineering, Mechanical Engineering, Physics, Chemistry, Materials, and Biomedical or Biotechnology-Related Major		
<b>Internship Field</b>	<p>The topics for internship can be</p> <p>i) design &amp; fabrication of microbio-chip for sorting of living cells and colloid particles,</p> <p>ii) microfluidic or nanofluidic analysis of complex fluids, and</p> <p>iii) fluorescent microscope imaging.</p> <p>Based on the student's interest, we quite welcome applications with inclination towards either experiments or simulations or both.</p>		

No.12

## Academic Advisor

<b>English Name</b>	Han, Seojung	<b>Korean Name</b>	한서정
<b>Major</b>	Division of Bio-Medical Science & Technology	<b>E-mail</b>	sjhan@kist.re.kr
<b>Laboratory: KIST School (Korea Institute of Science &amp; Technology)</b>			
<b>Introduction of Laboratory</b>	Research in our group centers on the development of small molecular kinase inhibitors. In addition, we are developing new organic chemistry methodologies for synthesizing biologically active complex molecules.		
<b>Reference</b>	<a href="https://eng.kist.re.kr/kist_eng/?sub_num=3715">https://eng.kist.re.kr/kist_eng/?sub_num=3715</a>	<b>Location</b>	Seoul
<b>Internship</b>			
<b>Related Majors</b>	Organic Chemistry, Synthetic Chemistry		
<b>Internship Field</b>	The internship will be involved in the design and discovery of architecturally novel kinase inhibitors. The knowledge of small molecular drug discovery and synthetic skills can be improved during the internship.		

No.13			
Academic Advisor			
English Name	Kim, Yun Kyung	Korean Name	김윤경
Major	Division of Bio-Medical Science & Technology	E-mail	yunkyungkim@kist.re.kr
Laboratory: KIST School (Korea Institute of Science & Technology)			
Introduction of Laboratory	Main research interests in the lab, 1) Development of neurodegenerative disease models including Alzheimer's disease 2) Identification of brain connectivity decreased in neurodegenerative disease 3) Investigation of AD mechanism and development of AD therapeutics		
Reference	<a href="https://sites.google.com/site/kistylab/home">https://sites.google.com/site/kistylab/home</a>	Location	Seoul
Internship			
Related Majors	Molecular Biology, Neuroscience, Biochemistry		
Internship Field	The internship will be involved in the identification of tau propagation regulators. Tau pathology spreads from one cell to another, but the underlying mechanism is unclear. We will identify modulators of tau propagation using our unique cell-based system.		

No.14			
Academic Advisor			
English Name	Kang, Youngmin	Korean Name	강영민
Major	Korean Convergence Medicine	E-mail	ymkang@kiom.re.kr
Laboratory: KIOM Campus (Korea Institute of Oriental Medicine)			
Introduction of Laboratory	Conservation/Propagation of Medicinal Plants Resources Technology of Korean Medicinal Microbes		
Reference	<a href="http://www.kiom.re.kr">www.kiom.re.kr</a>	Location	Naju
Internship			
Related Majors	Botany, Microbiology, Alternative Medicine, Life Sciences		
Internship Field	Someone who may interested in UST program before joining UST's Ph.D/Mater graduate Students, they may apply for UST global internship.		

No.15			
Academic Advisor			
English Name	Lee, Jun	Korean Name	이준
Major	Korean Convergence Medicine	E-mail	junlee@kiom.re.kr
Laboratory: KIOM Campus (Korea Institute of Oriental Medicine)			
Introduction of Laboratory	Natural drug discovery and development		
Reference	<a href="http://www.kiom.re.kr">www.kiom.re.kr</a>	Location	Naju
Internship			
Related Majors	Natural Product Chemistry, pharmacognosy, Pharmacy, Botany, Alternative Medicine, Life Sciences		
Internship Field	A pre-experience program for students who are interested in UST's Korean Medicine Life Science major and natural drug development.		

◦ Environmental Technology

No.16		Academic Advisor	
English Name	Heeyeon Kim	Korean Name	김희연
Major	New Energy and System Engineering	E-mail	heeyeon@kier.re.kr
Laboratory: KIER Campus (Korea Institute of Energy Research)			
Introduction of Laboratory	Our lab has focused on the synthesis and application of nano energy materials and catalysts used for various energy devices. We have developed the electrode catalyst for fuel cells, hydrogen generation catalyst, and mesoporous carbon materials used for energy devices. Also we are interested in nano material synthesis by CVD and atomic-scale characterization technique.		
Reference	www.kier.re.kr	Location	Daejeon
Internship			
Related Majors	Chemical engineering, Material science, Chemistry		
Internship Field	The internship will be involved in the development of nano energy materials including nano catalyst and electrode materials for energy devices. This experience would be helpful for the students who wants to study in the graduate school.		

No.17		Academic Advisor	
English Name	Hyunuk Kim	Korean Name	김현욱
Major	Advanced Energy and System Technology	E-mail	hyunuk@kier.re.kr
Laboratory: KIER Campus (Korea Institute of Energy Research)			
Introduction of Laboratory	Our laboratory is focus on synthesizing novel metal-organic frameworks for energy storage, gas adsorption and separation.		
Reference	<a href="https://scholar.google.co.kr/scholar?hl=ko&amp;as_sdt=0%2C5&amp;q=Hyunuk+Kim&amp;btnG=&amp;oq=Hyunuk+Kim">https://scholar.google.co.kr/scholar?hl=ko&amp;as_sdt=0%2C5&amp;q=Hyunuk+Kim&amp;btnG=&amp;oq=Hyunuk+Kim</a>	Location	Daejeon
Internship			
Related Majors	Chemistry		
Internship Field	The internship will be involved in the synthesis and characterization of metal-organic frameworks for energy storage such as battery.		



<b>No.18</b>			
<b>Academic Advisor</b>			
<b>English Name</b>	Chang Won Yoon	<b>Korean Name</b>	윤창원
<b>Major</b>	Division of Energy & Environment Technology	<b>E-mail</b>	cwoon@kist.re.kr
<b>Laboratory: KIST School (Korea Institute of Science &amp; Technology)</b>			
<b>Introduction of Laboratory</b>	Our major focus of research is in developing technologies related to hydrogen production/storage/applications		
<b>Reference</b>	<a href="https://sites.google.com/site/reformingkist/">https://sites.google.com/site/reformingkist/</a>	<b>Location</b>	Seoul
<b>Internship</b>			
<b>Related Majors</b>	Heterogeneous Catalysis, Homogeneous Catalysis, Chemistry, Chemical Engineering, Process Design/Control		
<b>Internship Field</b>	Our research group has opportunities of internship within the hydrogen research team. The intern will help our scientists to develop novel catalysts for ammonia decomposition reaction or to perform dehydrogenation reactions using a liquid-phase hydrogen carrier.		

<b>No.19</b>			
<b>Academic Advisor</b>			
<b>English Name</b>	Seonghyung Jang	<b>Korean Name</b>	장성형
<b>Major</b>	Petroleum Resources Technology	<b>E-mail</b>	shyi@kigam.re.kr
<b>Laboratory: KIGAM Campus (Korea Institute of Geoscience and Mineral Resources)</b>			
<b>Introduction of Laboratory</b>	The Seismic Data Processing Laboratory is to process seismic data and to make high quality subsurface images. The research areas are seismic modeling, prestack migration, anisotropic migration, seismic attributes, and wire line logging		
<b>Reference</b>	<a href="http://www.kigam.re.kr">www.kigam.re.kr</a>	<b>Location</b>	Daejeon
<b>Internship</b>			
<b>Related Majors</b>	Seismic Exploration, Geophysics, Geology and related areas		
<b>Internship Field</b>	The internship will be involved in the development of seismic modeling and data processing		

<b>No.20</b>			
<b>Academic Advisor</b>			
<b>English Name</b>	Sangheon Yi	<b>Korean Name</b>	이상현
<b>Major</b>	Petroleum Resources Technology	<b>E-mail</b>	shyi@kigam.re.kr
<b>Laboratory: KIGAM Campus (Korea Institute of Geoscience and Mineral Resources)</b>			
<b>Introduction of Laboratory</b>	Palynology lab. Focus on palynological analysis which can be applicable to oil exploration and biostratigraphy		
<b>Reference</b>	<a href="http://www.kigam.re.kr">www.kigam.re.kr</a>	<b>Location</b>	Daejeon
<b>Internship</b>			
<b>Related Majors</b>	Geology, marine geology, geoengineering		
<b>Internship Field</b>	The internship will be involved in extraction of palynoflora from the unconsolidated marine and terrestrial sediments		

No.21			
Academic Advisor			
English Name	Park Chang-Dae	Korean Name	박창대
Major	Plant System and Machinery	E-mail	parkcdae@kimm.re.kr
Laboratory: KIMM Campus (Korea Institute of Machinery & Materials)			
Introduction of Laboratory	Research and education are performed based on thermo-fluid mechanics for process design, safety, and reliability. Students work with Major equipment within energy plants that are used in energy production, transformation and usage.		
Reference	<a href="https://www.ust.ac.kr/plant.do">https://www.ust.ac.kr/plant.do</a>	Location	Daejeon
Internship			
Related Majors	plant system and Machinery, Reliability engineering		
Internship Field	<p>The primary responsibilities of this role, Intern, are to:</p> <ul style="list-style-type: none"> <li>-Design and perform lab simulation tests for structure durability of system functionality verification testing</li> <li>-Analyze data and equipment failures using statistical analysis tools to assess current instrument calibration program and identify areas for potential improvements</li> <li>-Work with Reliability Engineers to support mechanical integrity, preventative, and predictive maintenance programs.</li> </ul>		

No.22			
Academic Advisor			
English Name	Sungjun Hong	Korean Name	홍성준
Major	Renewable Energy Engineering	E-mail	jjunnii@kier.re.kr
Laboratory: KIER Campus (Korea Institute of Energy Research)			
Introduction of Laboratory	We have been working on the field of (photo)electrochemical devices such as DSSC, electrochromic and hybrid device which can be applicable to building integrated module for building energy efficiency improvement.		
Reference	<a href="http://www.kire.re.kr">www.kire.re.kr</a>	Location	Daejeon
Internship			
Related Majors	Chemistry, polymer, material chemistry, electrochemistry		
Internship Field	<p>Fabrication and evaluation of photoelectrochemical device,            Design and evaluation of (semi)solid-state electrolyte            Development of nanocrystalline metal oxides</p>		

No.23			
Academic Advisor			
English Name	Lee In-Gu	Korean Name	이인구
Major	Renewable Energy Engineering	E-mail	samwe04@kier.re.kr
Laboratory: KIER Campus (Korea Institute of Energy Research)			
Introduction of Laboratory	Bio-oil production by gas pyrolysis and liquefaction of lignocellulosic biomass Catalytic upgrading of bio-oil to fuels for power generation of transprotonation		
Reference	<a href="http://www.kire.re.kr">www.kire.re.kr</a>	Location	Daejeon
Internship			
Related Majors	Chemical engineering, Industrial chemistry, chemistry		
Internship Field	The internship will be involved in the development of continuous system for liquefaction of lignin and catalytic upgrading of bio-oil in supercritical ethanol		

◦ Information Technology

No.24			
Academic Advisor			
English Name	Buseung Cho	Korean Name	조부승
Major	Data & High Performance Computing Science	E-mail	bscho@kisti.re.kr
Laboratory: KISTI Campus (Korea Institute of Science & Technology Information)			
Introduction of Laboratory	Research for high performance networking, network management with AI tech., international research networking		
Reference	www.kisti.re.kr	Location	Daejeon
Internship			
Related Majors	Computer Network, Network Management, Case-Based Reasoning, Software-Defined Network		
Internship Field	The internship will be involved in the development and research of advanced performance measurement and monitoring system		

No.25			
Academic Advisor			
English Name	Kihyeon Cho	Korean Name	조기현
Major	Data & High Performance Computing Science	E-mail	cho@kisti.re.kr
Laboratory: KISTI Campus (Korea Institute of Science & Technology Information)			
Introduction of Laboratory	Computational science on particle physics, High energy physics experiment-theory-simulation		
Reference	https://hep.kisti.re.kr	Location	Daejeon
Internship			
Related Majors	Physics, mathematics, computer science or related fields		
Internship Field	The internship will be involved in the development of high energy physics simulation and computational science		

No.26			
Academic Advisor			
English Name	Minjoong Jeong	Korean Name	정민중
Major	Data & High Performance Computing Science	E-mail	jeong@kisti.re.kr
Laboratory: KISTI Campus (Korea Institute of Science & Technology Information)			
Introduction of Laboratory	Mechanical Simulation, Machine Learning and High Performance Computing		
Reference	www.kisti.re.kr	Location	Daejeon
Internship			
Related Majors	Mechanical Engineering, Industrial Engineering (Ability of C Program Language Required)		
Internship Field	The internship will be involved in a system development of safety prediction for mechanical devices using acoustic sensor data.		

No.27

## Academic Advisor

<b>English Name</b>	BongKi Mheen	<b>Korean Name</b>	민봉기
<b>Major</b>	ICT	<b>E-mail</b>	bkmheen@etri.re.kr
<b>Laboratory: ETRI School (Electronics &amp; Telecommunication Research Institute)</b>			
<b>Introduction of Laboratory</b>	We have been researched in the arena of advanced LiDar technologies and its applications for autonomous cars and drones. Recent activity can be found in <a href="http://bit.ly/ETRI-STUD-Lidar">http://bit.ly/ETRI-STUD-Lidar</a>		
<b>Reference</b>	<a href="http://bit.ly/ETRI-STUD-Lidar">http://bit.ly/ETRI-STUD-Lidar</a>	<b>Location</b>	Daejeon
<b>Internship</b>			
<b>Related Majors</b>	Computer science and related majors to make it possible to program 3D point clouds applications using C++, Python and other related program environments		
<b>Internship Field</b>	The internship will be involved in the enhancement of reconstruction of the existing 3D display program for more efficient real-time 3D LiDAR point clouds.		

No.28

## Academic Advisor

<b>English Name</b>	Joo Yeon Kim	<b>Korean Name</b>	김주연
<b>Major</b>	ICT	<b>E-mail</b>	jooyeon.kim@etri.re.kr
<b>Laboratory: ETRI School (Electronics &amp; Telecommunication Research Institute)</b>			
<b>Introduction of Laboratory</b>	Reality device research group focus on developing next generation displays, multi-functional sensors, realistic image panel, and skin electronic devices. Also Stretchable displays and digital holography optical modulator are being investigated as core technologies. We utilize our technology infrastructure to develop prototypes of materials, parts, and equipment companies in related fields and provide technical support to resolve technology hurdles.		
<b>Reference</b>	<a href="https://www.etri.re.kr/eng/sub6/sub6_01020101.etri?departCode=25&amp;departInfoCode=73">https://www.etri.re.kr/eng/sub6/sub6_01020101.etri?departCode=25&amp;departInfoCode=73</a>	<b>Location</b>	Daejeon
<b>Internship</b>			
<b>Related Majors</b>	This research has many interdisciplinary aspects that demand a highly motivated candidate with strong analytical abilities and background in material chemistry and nano/micro fabrication.		
<b>Internship Field</b>	The internship will be involved in the development of next generation displays, such as stretchable displays, digital holography optical modulator, and color-modulated displays are being investigated as core technologies.		

No.29

## Academic Advisor

<b>English Name</b>	Seung-Ik Lee	<b>Korean Name</b>	이승익
<b>Major</b>	ICT	<b>E-mail</b>	the_silee@etri.re.kr
<b>Laboratory: ETRI School (Electronics &amp; Telecommunication Research Institute)</b>			
<b>Introduction of Laboratory</b>	The lab is now very actively focusing on deep learning, reinforcement learning, and their application to real world problems. The problems include, but not limited to, object tracking in robots and especially in drones and detecting anomaly from videos taken from a patrolling robot.		
<b>Reference</b>	<a href="http://silee.ust.ac.kr/">http://silee.ust.ac.kr/</a> (for lab introduction) <a href="https://www.etri.re.kr/eng/sub6/sub6_0101.etr">https://www.etri.re.kr/eng/sub6/sub6_0101.etr</a> <a href="https://www.etri.re.kr/eng/sub6/sub6_0101.etr">i?departCode=10</a> (for my department)	<b>Location</b>	Daejeon
<b>Internship</b>			
<b>Related Majors</b>	We are looking for interns who are (have): 1) fluent in english 2) basic understanding of deep learning (or reinforcement learning) 3) highly experienced in python, c++, and deep learning toolkit such as PyTorch		
<b>Internship Field</b>	The internship will be involved in the development of 1) object tracking 2) anomaly detection 3) collecting, labeling, manipulating the dataset for 1) & 2)		

No.30

## Academic Advisor

<b>English Name</b>	Uendo Lee	<b>Korean Name</b>	이은도
<b>Major</b>	Industrial Technology	<b>E-mail</b>	uendol@kitech.re.kr
<b>Laboratory: KITECH School (Korea Institute of Industrial Technology)</b>			
<b>Introduction of Laboratory</b>	Our laboratory conducts various research and development on energy production systems focused on thermochemical conversion of biomass. We are conducting experiments, numerical analysis, and process simulation studies for fluidized bed systems, and are carrying out new approaches such as oxy-fuel combustion and emission control using molten metal		
<b>Reference</b>	<a href="http://eng.kitech.re.kr">http://eng.kitech.re.kr</a>	<b>Location</b>	Cheonan/Daejeon
<b>Internship</b>			
<b>Related Majors</b>	Mechanical Engineering, Chemical Engineering, Energy related departments		
<b>Internship Field</b>	The internship will be involved in the development of one of the following research topics - Thermochemical conversion process of biomass(Gasification, pyrolysis, combustion, and etc.) - Emission control with molten metal - Experiments or Process simulation		

◦ Natural Science

No.31		Academic Advisor	
English Name	Ocean Science	Korean Name	양찬수
Major	Integrated Ocean Sciences	E-mail	yangcs@kiost.ac.kr
Laboratory: KIOST School (Korea Institute of Ocean Science & Technology)			
Introduction of Laboratory	<p>This laboratory aims to marine safety through research works on</p> <ul style="list-style-type: none"> <li>-Ship evacuation, moving object counting, etc.</li> <li>-Multidimensional uses of optical &amp; SAR satellite data, hyperspectral imagery, AIS, radars, impulse radars, IR cameras, aerial photographs and different types of sensors for the detection &amp;/or prediction of ships, sea ice, sea fog, SST, oil pollution form ship accidents, macroalgal bloom, red tide, land masking, shoreline detection, etc.</li> </ul>		
Reference	www.kiost.ac.kr	Location	Busan
Internship			
Related Majors	Ocean Sciences, Marine Sciences, Environmental Sciences, Computer Sciences, Mathematics, Physics, etc.		
Internship Field	The internship will be involved in the development of methods for object detection and classification in the sea from satellite data		

No.32		Academic Advisor	
English Name	Youn-Ho Lee	Korean Name	이윤희
Major	Ocean Science	E-mail	ylee@kordi.re.kr
Laboratory: KIOST School (Korea Institute of Ocean Science & Technology)			
Introduction of Laboratory	The main research goals of my laboratory are to understand ecology and evolution of marine organisms and to examine change of the structure and function of marine ecosystems.		
Reference	www.kiost.ac.kr	Location	Busan
Internship			
Related Majors	Marine Molecular Genetics		
Internship Field	The internship will be involved in laboratory works on DNA extraction and sequence analysis with marine animal samples such as zooplankton and sea urchins and in investigation of their population genetics and marine ecosystem structure change.		

No.33

## Academic Advisor

<b>English Name</b>	Eui-Jeon Woo	<b>Korean Name</b>	우의전
<b>Major</b>	Bioscience (Biosystems and Bioengineering)	<b>E-mail</b>	ejwoo@kribb.re.kr
Laboratory: KRIBB School (Korea Research Institute of Bioscience & Biotechnology)			
<b>Introduction of Laboratory</b>	Our lab focuses on structural and functional studies of CRISPR/Cas system to understand its mechanism and to apply the system for gene editing technology.		
<b>Reference</b>	www.kribb.re.kr	<b>Location</b>	Daejeon
Internship			
<b>Related Majors</b>	Biological sciences, protein biochemistry, molecular biology		
<b>Internship Field</b>	The internship will be involved in purification crystallization and analysis of CRISPR/Cas proteins of microbial immune system		

No.34

## Academic Advisor

<b>English Name</b>	Cho, Yee Sook	<b>Korean Name</b>	조이숙
<b>Major</b>	Bioscience (Functional Genomics)	<b>E-mail</b>	june@kribb.re.kr
Laboratory: KRIBB School (Korea Research Institute of Bioscience & Biotechnology)			
<b>Introduction of Laboratory</b>	"Stem Cell Research Laboratory in KRIBB" The mission of our research is to advance the basic and translational stem cell research into noble regenerative therapies based on pluripotent stem cell and cellular reprogramming technology. Our team is mainly focused on the development of innovative interdisciplinary approaches to control the fate of stem cells and devise original clinically applicable cell- and tissue- based products.		
<b>Reference</b>	www.kribb.re.kr	<b>Location</b>	Daejeon
Internship			
<b>Related Majors</b>	Overall Biology(cell biology, molecular biology, etc.) Tissue engineering		
<b>Internship Field</b>	The internship will be involved in the development of somatic cell reprogramming technology to generate functional human cells. The student will actively engaged in stem-cell based research activities and on-going projects.		

No.35

## Academic Advisor

<b>English Name</b>	Tae Geol Lee	<b>Korean Name</b>	이태걸
<b>Major</b>	Nano Science	<b>E-mail</b>	tglee@kriss.re.kr
<b>Laboratory: KRISS Campus (Korea Research Institute of Standards and Science)</b>			
<b>Introduction of Laboratory</b>	The nonbio measurement center focuses on developing methods for nanoscale analysis of biomolecules by using optical techniques and mass spectrometry. We utilize such tools to develop methods for bioimaging, biosensors for disease diagnosis and to characterize nano materials for bio-application. Also, we are developing standardized measurement techniques for assessment of safety and toxicity of nano materials, thereby providing safety guidelines for nanobio industry		
<b>Reference</b>	<a href="https://sites.google.com/site/krisscnbm/">https://sites.google.com/site/krisscnbm/</a>	<b>Location</b>	Daejeon
<b>Internship</b>			
<b>Related Majors</b>	Physics, Chemistry, Biology, Biochemistry		
<b>Internship Field</b>	This internship program is committed to provide comprehensive education to students who pursue careers in science fields. We help students to take their classroom knowledge and apply it to hands-on, real life situations by participating in the cutting-edge researches in nanobiotechnology.		

No.36

## Academic Advisor

<b>English Name</b>	Kim Eun Ju	<b>Korean Name</b>	김은주
<b>Major</b>	Radiological & Medico-Oncological sciences	<b>E-mail</b>	ejkim@kirams.re.kr
<b>Laboratory: KIRAMS Campus (Korea Institute of Radiological &amp; Medical Sciences)</b>			
<b>Introduction of Laboratory</b>	We have focused our scientific interests on the topics related to life-threatening disorders including cancer and Metabolic diseases. With our expertise in biological imaging, cancer chemotherapy and radiotherapy research, we have established a series of platforms for preclinical evaluation of early diagnosis/prognosis and risk assessment, developed a epigenetic changes method for improve the efficacy of radiotherapy of tumors, discovered a novel pharmacological inhibition effects.		
<b>Reference</b>	<a href="http://www.kirams.re.kr">www.kirams.re.kr</a>	<b>Location</b>	Seoul
<b>Internship</b>			
<b>Related Majors</b>	Molecular cell biology, Biochemistry, Medical Science		
<b>Internship Field</b>	The internship will be involved in the development of a epigenetic changes method for improve the efficacy of radiotherapy of tumors, discovered a novel pharmacological inhibition effects.		



◦ Nano Technology

No.37			
Academic Advisor			
English Name	Kim, Kwang-Seop	Korean Name	김광섭
Major	Nano-Mechatronics	E-mail	kskim@kimm.re.kr
Laboratory: KIMM Campus (Korea Institute of Machinery & Materials)			
Introduction of Laboratory	Applied Nanomechanics Group in KIMM is aim to develop the measurement and analysis technology of nano-structures and the transfer technology of nano-structures for the realization of metamaterials and stretchable devices		
Reference	<a href="http://www.ust.ac.kr/prog/profsr/nanomt_eng/su_b01_02/view.do?emp_no=22734&amp;rep_cd=T-26">http://www.ust.ac.kr/prog/profsr/nanomt_eng/su_b01_02/view.do?emp_no=22734&amp;rep_cd=T-26</a>	Location	Cheonan/Daejeon
Internship			
Related Majors	Mechanical Engineering, Materials Science, Environmental Science		
Internship Field	<ul style="list-style-type: none"> <li>- Fabrication of patterned polymer film</li> <li>- Characterization of adhesion properties of the polymer film</li> <li>- Application of the polymer film on transfer process of thin film device</li> </ul>		

No.38			
Academic Advisor			
English Name	Seung-Mo Lee	Korean Name	이승모
Major	Nano-Mechatronics	E-mail	sm.lee@kimm.re.kr
Laboratory: KIMM Campus (Korea Institute of Machinery & Materials)			
Introduction of Laboratory	Our team is undergoing fundamental researches on biologically inspired materials and biomaterial itself. We are developing multifunctional materials based on Nature's design principles.		
Reference	<a href="http://www.kimm.re.kr">www.kimm.re.kr</a>	Location	Cheonan/Daejeon
Internship			
Related Majors	Mathematics, Physics, Material Science, Material Engineering, Chemistry, etc.		
Internship Field	The internship will be involved in investigation of biological materials like marine organisms, plants, and insects from the perspective of mathematics, physics or chemistry.		

No.39			
Academic Advisor			
English Name	Lee, Taik-Min	Korean Name	이택민
Major	Nano-Mechatronics (Printed Electronics)	E-mail	taikmin@kimm.re.kr
Laboratory: KIMM Campus (Korea Institute of Machinery & Materials)			
Introduction of Laboratory	Our lab. Interests lie in the fields of printing process and equipment development for printed electronic devices, sensors, and actuators such as flexible display, battery, solar cell, and bio-sensor.		
Reference	<a href="http://www.kimm.re.kr">www.kimm.re.kr</a>	Location	Cheonan/Daejeon
Internship			
Related Majors	Printing process and system development: The roll to roll gravure printing, offset printing, metaljet, screen printing, flexo printing, pad printing, and hybrid printing processes and systems.		
Internship Field	Study of printing process for printed electronic devices.		

□ **Note**

- Successful applicants without a visa should obtain visa valid for the duration of the internship in Korea. We will provide a guide on how to apply for visa when we release announcement of results.
- All application documents should be written in English or Korean. Documents not written in English or Korean must be accompanied by certified translations(or documents notarized at embassy).
- Fill out an accurate e-mail address in the application as important announcements will be made via e-mail. UST will not take responsibility for disadvantages that may occur from inaccurate information.
- If falsified or forged documents are found, this can lead to application rejection and a failure of admission.
- Details are subject to change.

□ **Forms(attached separately)**

- Recommendation Letter(selective)