



WORLD TOP 10 UNIVERSITY BY 2030

UNIST



UNIST
Ulsan National Institute of
Science and Technology

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UNIST

Scientists who dream to present happiness to humankind,
they are **UNI★STARS**.

UNIST is making the world more abundant,
beautiful and healthy by advanced research
into science and technology.



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To the Future Steve Jobs! Making Quantum Leaps to Become a World Class University

UNIST was founded in 2007 as a research-oriented national university in the Korean industrial capital of Ulsan, where world-renowned automotive, shipbuilding, petrochemical, and secondary cells industries are clustered. The vision of UNIST is to become a world-leading university to advance science and technology for the prosperity of humankind.

With strong support from central and local governments, UNIST aims to rank in the top 10 of globally competitive universities emphasizing science and technology by the year 2030. The strategies for reaching this goal include creative, interdisciplinary and global education and research. Key components of university development are students, faculty and infrastructure. Therefore, UNIST is particularly focusing on recruiting gifted students and world-class leading scientists as a faculty, and continuing to provide world class education and state-of-the-art research infrastructure.

In its' 6-year short history, UNIST has won many national research projects such as World Class University (WCU), Science Research Center (SRC), Information Technology Research Center (ITRC), National Research Laboratory (NRL) and 2 campus research centers from Institute for Basic Science (IBS). Each IBS center will be supported about 10 million dollars annually for 10 years and these centers will play key roles in advancing research and development.

All courses offered at UNIST are taught in English. UNIST has opened its gates to invite gifted students and scientists from all over the world who dream and have the potential of becoming a "Future Einstein", "Future Edison", and "Future Bill Gates or Steve Jobs." At present, UNIST has nine unnamed bridges on campus. In time, these bridges will be named after the Nobel laureates from UNIST.

We call a UNIST student UNI★STAR, the unique star, who is a true shining star in the science and technology world.

Challenge yourself to be a UNI★STAR!

UNIST President

M. J. Cho

World Top 10 University by 2030



VISION “World Leading University to Advance Science and Technology for the Prosperity of Humankind”

GOALS To be Ranked within the Top 10 Science and Technology Universities by 2030

Education : Cultivation of creative science and technology leaders

Research : Realization of convergence science and technology indicating the new paradigm

STRATEGIES **Creativity-Interdisciplinary Studies-Globalization-Thrust Areas**

Creativity : **Debate-oriented, convergent and creative classes based on e-Education**

- Mobile Campus connected with Wi/Fi - Smart Phone - LMS

Convergence of humanity and philosophy through AHS & Entrepreneurship

- Arts, Humanities, and Social Sciences (AHS), all classes by full-time professors

Interdisciplinary Studies

- All students required to complete two or more major tracks
- All professors appointed to two or more schools

Globalization : Global Campus

- 100 % English lectures
- International professors and students - up to 20%

Thrust Areas (Focused Research Areas)

- Advanced Materials (Bio-materials, Energy materials, Mechanical Materials)
- Next-Generation Energy

Writing a New History of Science and Technology

2009

- 03 First UNIST matriculation ceremony
- 04 Two UNIST professors awarded World Class University (WCU) grants
- 06 Designated as a principal university in the field of new materials/nano fusion research
- 06 Designated as a leading university for its Admissions Officer System
- 10 Opening UNIST-Olympus Biomed Imaging Center (UOBC)

2010

- 04 Opening of the Green Electric Vehicle(GEV) Center
- 05 Opening of the Graphene Research Center
- 06 Opening of the Supercomputing Center
- 08 Opening of the Hans Schöler Stem Cell Research Center
- 12 Opening of the Basic Atomic Energy Research Institute (BAERI)

2011

- 05 Designated as a combined Campus (D-U-P) for International Science/Business Belt Project
- 06 Established KIER-UNIST Advanced Center for Energy (KU ACE)
- 06 Designated as an IT Research Center Supported by the Ministry of Education, Science and Technology
- 09 Moo Je Cho, PhD, elected as UNIST's 2nd president
- 10 UNIST 2030 Vision Proclamation
- Opening of the UNIST-FEI Atomic Imaging Center
- 12 Designated as a research partner with Max-Planck-Gesellschaft (Germany)

2012

- 02 MOU with MEST and 4+1 Science and Technology Universities
- 09 MOU with KIST to open Ulsan Interdisciplinary Research Center for Advanced Materials
- 10 Invite Site-Lab of Basic Science Research
- 10 Designated as an IBS Campus in the advanced material area
- 11 Selected as the best institution in Technology Transfer & Commercialization
- 12 "A newly developed, highly efficient non-precious metal electrocatalyst for the oxygen reduction reaction (ORR)", Prof. Jaephil Cho (Interdisciplinary School of Green Energy), Selected as one of 2012 Top Ten Science and Technology News

2013

- 02 First UNIST Commencement Ceremony
- 03 Top 9 Korean Universities according to Nature Publishing Index(NPI) Asia-Pacific 2012
- 03 Ground-breaking Ceremony for the Low Dimensional Carbon Materials Center
- 05 MOU among UNIST, KAIST, GIST, DGIST, POSTECH and MSIP for Five STAR (Science and Technology After R&D) initiative
- 05 Technology Transfer to Sejin, Flexible Secondary Battery Technology (Total of 64 hundred million KRW of Technology Transfer Fee)



World's Leading Faculty Members in Convergence Science and Technology

One of Top 9 Korean Universities
in Nature Publishing Index
Asia-Pacific 2012

Professors

201 professors (As of March 2013)
257 Professors by 2013
500 professors by 2020 (Professors:Students = 1:10)
100% International research experienced professors
Over 2/3 International Ph. D Professors(HARVARD, MIT, Stanford, Oxford Etc)
More than 10 Publications in Top Journals including Science and Nature in recent 3 years

Average age of **40.5**

Young and passionate faculty members and world renowned scholars,
together, cultivate future global leaders in science and technology.



The first discoverer of graphene, "miracle material"
Prof. Konstantin S. Novoselov

- 2010 Nobel laureate in Physics
- 2008 Winner of Europhysics Prize
- Honorary director of the Low Dimensional Carbon Materials Center, UNIST
- Published more than 60 research articles on several topics including mesoscopic superconductivity, and graphene.



The leading scientist in multidimensional and complex biosignal network
Prof. Pann-Ghill Suh

- Research on metabolic related signal network and cancer and stem cells
- More than 260 SCI research articles including Science, Cell, and Nature
- More than ten thousand article citations
- Selected in top 2% important articles in medical and biology area
- 2007 National Scholar of Korea



The world recognized energy chemist
Prof. Jae Sung Lee

- World leading Scientist in Photo-Catalytic Water Splitting area
- Research on Photo-catalytic hydrogen, Fuel cell and Eco-friendly catalysis
- 340 research articles in SCI journals, 100 registered patents
- 2007 Thomson Scientific Citation Laureate Award
- Editors of 6 SCI journals including Journal of Catalysis



The creator of 'Lab CD' System
Prof. Marc J. Madou

- Writer of 'Fundamentals of Micro-fabrication'
- Vice President of Advanced Technology at Nanogen
- World expert on micro-chemical sensor and Bio-MEMS (Micro-Electro-Mechanical System)
- Conducting joint research on Nano science and technology for medical diagnosis
- A member of WCU (World Class University) Project at UNIST



A leading scientist in developing medicine for human neurodegenerative diseases
Prof. Mi Hee Lim

- A leading women scientist in the field of biological inorganic chemistry and metalloneurochemistry
- Outstanding research articles, more than 50 in SCI Journals including Nature, PNAS and JACS
- National Science Foundation (NSF) Career Award (2013)
- Alfred P. Sloan Research Fellowship (2012)
- The Paul Saltman Award (2012)



A scientist breaking down the limit of energy
Prof. Jaephil Cho

- Director of New Combined Technology Business Institute and Director of ITRC
- Developer of the hydrosphere nano particle coating technology
- Publishing more than 170 outstanding research articles in the SCI journals
- 51 registered patents and 42 patents applied.
- "A newly developed, highly efficient non-precious metal electrocatalyst for the oxygen reduction reaction (ORR)", selected as one of 2012 Top Ten Science and Technology News



The world recognized inorganic chemist
Prof. Jan-Uwe Rohde

- World leading scientist in the area of Inorganic Chemistry
- 33 outstanding research articles including JACS and Angew. Chem
- National Science Foundation (NSF) Career Award (2011)
- Deutsche Forschungsgemeinschaft Fellowship (DFG, German Research Foundation, 2000)



Innovative scientist in nano-bioscience
Prof. Yoon-Kyoung Cho

- Director of WCU (World Class University) project at UNIST
- World Expert in Nano-biosensors and lab-on-a-chips for biomedical application
- More than 42 outstanding research articles in SCI journals and 116 registered patents.
- Developer of micro-scale blood analyzer using lab-on-a-chip technology
- Former senior researcher at Samsung Advanced Institute of Technology (SAIT)
- Editorial board member of Lab on a Chip by RSC

UNI★STARs, the Future Global Star-Scientists

Students

(As of March 2013)

3313 Undergraduates / 504 Graduates

90% of 175 first Gradutors, advance to graduate schools

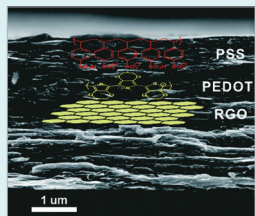
Articles published by Undergraduate Students



Kiyoung Jo
(School of Electrical and Computer Engineering)

The Journal of Langmuir published by ACS(2011.1.12)

“Develops Technology of Manufacturing Hybrid Graphene Ultra-Thin Film Transparent Conducting Polymer Electrodes”



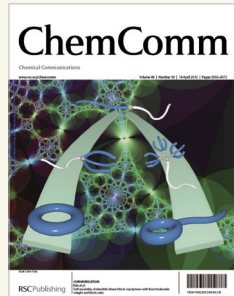
Enhanced chemical stability and electrical conductivity by adding conducting polymers



Moon-Gon Jeong
(School of Nano-Bioscience and Chemical Engineering)

Cover Article in Chemical Communications (2012.3.28)

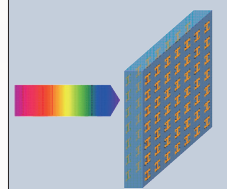
“Self-Assembly of Dendritic-Linear Block Copolymers with Fixed Molecular Weight and Block Ratio”



Bo-jeong Seo
(School of Electrical and Computer Engineering)

Journal of Applied Physics (2012.6.6)

“Observation of trapped-modes excited in double-layered symmetric electric ring resonators”



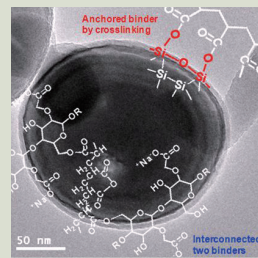
Manipulating light using 3D meta materials



Bonjae Koo
(Interdisciplinary School of Green Energy)

Angewandte Chemie International Edition(2012.7.29)

“A highly crosslinked polymeric binder for high-performance Si negative electrode in Li-ion batteries”



A cross-linked polymeric binder inhibits mechanical fracture of silicon negative electrodes during cycling



There are many proud UNI★STARs who have published research articles in leading international journals or won international competitions in various areas by performing outstanding research works. UNIST is taking its firm position as a cradle of future global star scientists.

Student Awards

Korea's Promising Future Leaders Award

- 2010 Chan Wool Kim (Interdisciplinary School of Green Energy)
- 2011 Kiyoung Jo (School of Electrical and Computer Engineering)
- 2012 Bonjae Koo (Interdisciplinary School of Green Energy)
Ki Hyuk Yi (School of Nano-Bioscience and Chemical Engineering)

Undergraduate Research Program(URP) Awards

- 2011 Seongjoon Ahn (School of Mechanical and Advanced Materials Engineering), Kwan-woo Lim (School of Nano-Bioscience and Chemical Engineering)
- 2012 Kiyoung Jo (School of Electrical and Computer Engineering)
Tae Young Yoon, Eung-jin Ahn (School of Nano-Bioscience and Chemical Engineering)
- 2013 Hun Han Yoon, Ga Hyun Choi, Seung Chul Chung(School of Electrical and Computer Engineering)

2013 Silver A' Design Award & Competition

- Yeonghun Kim and Sojung Kim, Graduate students in Intergrated Industrial Design
- Ji-eun Bae, Sung Eun Jeon, Kwangmin Cho, and Eun Young Choi, Undergraduates in School of Design and Human Engineering

2012 The Best Article Award in the 13th Asia Pacific Industrial Engineering and Management Systems Conference. (APIEMS)

- Su Jin Pyo (School of Nano-Bioscience and Chemical Engineering), Minsu Cho (School of Technology Management)

2012 Second Place in 2013 World Finals of Odyssey of the Mind, UNIST 'LAON'

2011 Award at the Korean Social Venture Competition, UNIST 'Voice of Sullivan'





Global University Leading the “Korean Wave/Hallyu” in Science and Technology

Accredited by the International Education Quality Assurance System (IEQAS)

Outstanding young international scientists including one hundred International Science Olympiad winners from more than 26 countries gathered here at UNIST. UNIST has been accredited by the International Education Quality Assurance System (IEQAS) and it is leading world science by cultivating global experts who will propagate the Korean Wave in science and technology.



Zhassulan Shaikhygali
(Kazakhstan, Silver medalist in International Biology Olympiad)

“UNIST is the place which makes my dreams come true. It is my best choice with 100% English lectures, Convergence Education System, and an advanced high-tech research environment, all of which are above my expectations in terms of quality. I would like to continue my studies at the Hans Schöler Stem Cell Research Center (HSSCRC) and try to be a scientist contributing to the development of novel therapies to regenerate damaged tissues and overcome debilitating chronic diseases.

Man Sze Wong

(China, Transferred graduate from Hong Kong University of Science and Technology)

“I tried to gather all information about possible future graduate schools for myself. UNIST was the most attractive school. Young and enthusiastic professors, a growing campus, and advanced research capability in advanced materials etc, all would be stepping stones to help me grow as a global scientist.”



Collaborative Research Network with Outstanding International Universities

UNIST is enhancing its global research competitiveness through cooperation with scholars from international universities and research institutions as well as through student exchange programs.



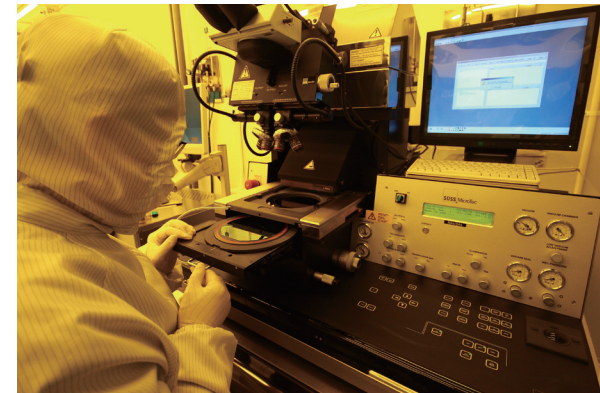
UNIST is also building a joint research center for advanced materials with the Georgia Institute of Technology and striving to establish the best research infra-structure through collaboration with Harvard University, UC-Irvine, UT-Dallas, University of Manchester, MPI for Molecular Medicine, IIT-Kanpur and other world-leading universities and institutions.

Research on the Advanced Materials, Attracting International Attention



A Global Leader in Research on Advanced Materials

UNIST succeeded in hosting a Campus Research Center by recruiting Dr. Steve Granick and will be funded 10 billion KRW for 10 years from the Institute for Basic Science (IBS). Along with Prof. Steve Granick, the winner of the National ACS Award in Colloid and Interface Science 2013, UNIST will establish a Campus Research Center, 'SMART'- Soft Matter Advanced Research Team - and strive to solve various problems for human life by focusing on research on soft condensed matter including polymers, colloids, liquid substances, complex fluids and biomaterials. UNIST was also selected as a Campus Research Center in Advanced Materials and is making every effort to make the dream come true, "World Top 10 University by 2030".



Research Centers for Industries and Universities

- Center for Cell to Cell Communication in Cancer(C⁵)
- Center for Battery Materials for Mobile IT Devices
- GEV (Green Electric Vehicle) Research Center
- Research Institute of Next Generation Atomic Reactor
- KIER-UNIST Advanced Center for Energy (KU ACE)
- Super Computing Center
- Hans Schöler Stem Cell Research Center (HSSCRC)
- Low Dimensional Carbon Materials Center
- UNIST-Olympus Biomed Imaging Center (UOBC)
- UNIST-FEI Atomic Imaging Center
- Ulsan Radiation Monitoring Station

UNIST contributes to making Korea a leader of science and technology, by promoting outstanding research achievement through mutual cooperation among industry, universities and research institutes.



ASIA-PACIFIC RANK	SOUTH KOREA TOP TEN	NATIONAL RANK
	South Korea has 21 institutions in the Asia-Pacific top 200	
2012	INSTITUTION	2012
21	Yonsei University	1
24	Seoul National University	2
27	KAIST	3
33	Sungkyunkwan University	4
43	Hanyang University	5
45	Korea University	6
53	GIST	7
58	POSTECH	8
61	SAMSUNG	9
68	UNIST	10

Top 9 Korean Universities by Nature Publishing Index Asia-Pacific 2012

UNIST ranks in the top 9 Korean Universities for the first time since its opening 4 years ago, according to the Nature Publishing Index (NPI) Asia-Pacific 2012. Based on the output of research articles from nations and institutes published in the 18 Nature-branded primary research journals over the calendar year, there is no doubt that UNIST is one of the best Science and Technology specialized universities.

Now, UNIST is aiming to be one of the top 10 universities in the world through consistently recruiting outstanding scholars and expansion of research facilities.

Grand spectacle as a world leading research university

By 2016, UNIST will span 101.293m², and feature massive research facilities and infrastructure with a budget of 0.2 trillion won. There will be a research center for advanced interdisciplinary research and this research center will be equipped with another high-tech clean room and a video conference room with a capacity of two hundred. The research buildings will provide exciting new facilities such as video conferencing, an intelligent power management system, and wireless facility management system.

UNIST is planning to adopt an open, innovative laboratory structure which allows interdisciplinary group research by benchmarking the MIT Media Lab and other interdisciplinary systems of world leading universities.

UNIST is also making a foundation towards a world leading research university by constructing the Advanced Biological Materials Research Center (a tentative English name), and the Low Dimensional Carbon Materials Center along with the above efforts.



Unique Privileges for UNI★STARs



100% English Lectures Cultivating Global Star Scientists

All classes at UNIST are provided in English for globalized education and research. UNI★STARs are now able to have global competitiveness with high quality education without expensive study abroad and UNIST can attract outstanding international students. UNIST is also increasing the number of international professors and students to 20% and it will be reborn as a global campus true to the name.

Creative Leadership Program

By applying a Learning Management System (LMS) to all classes, UNIST is operating debate oriented classes with an advanced education system, flipped education model. UNIST is cultivating global leaders with sincerity through honor system, administrating tests unsupervised and creative leadership through rowing, lifeguard training, army experience, role playing and other distinguished programs. UNI★STARs are growing as warm-hearted global leaders by participating in various community services like 'Community Service, Best Ulsan', education service and other activities.

Required Interdisciplinary Curriculum

Freshmen take general courses and decide their major when they advance to sophomores. They are required to complete more than 2 majors and they can enhance their global competitiveness by convergence education. UNIST promotes convergence education to cultivate mind of culture and humanity for students. They need to take more than 7 classes of Arts, Humanities and Social Sciences including Arts&Creativity, Literature&Creativity, and What is 'I'? All professors are also required to belong to 2 or more schools, promoting interdisciplinary research through UNIST Multi-disciplinary Institute (UMI) and generate synergic energy of interdisciplinary research and convergence education.

Distinguished Students Supporting Programs

All freshmen will receive a scholarship for the first semester and they can continue their scholarships if they maintain their GPA above 3.3. UNIST provides various scholarships including the UNI★STAR scholarship, Kyungdong scholarship, and Dream scholarship, UNIST is cultivating open, global minded scientists by providing a variety of international exchange programs including the Summer Research Program, Internship Program, Culture Exploring Program, Academic Program.



Research

New Global Research Brand, UNIST

Every day a silent battle is taking place in the field of science and technology. UNIST has shaken up the world of science with interdisciplinary research which is able to change the existing research paradigm. Especially, UNIST is producing outstanding research achievements by pioneering new areas of convergence research in the fields of Green Energy, Secondary Batteries, and Low Dimensional Carbon Materials. Undergraduate students are also participating in active research work.

Research Articles in SCI International Journals in the past 3 years

Year	2010	2011	2012	2013	Total
copies	527	500	576	106	1,709

Scientists Who Wrote Research Articles in Major International Journals in recent 3 years

Name	Journals	Year/Month
Hyunhyub Ko	Nature Materials	2010.09
Chan Young Park	Science	2010.10
Hyunhyub Ko	Nature	2010.11
Hoi Ri Moon	Nature Materials	2011.04
Soon-Yong Kwon	Nature Communications	2012.01
Bum Suk Zhao	Nature Nanotechnology	2012.03
Jang-Ung Park	Nature Materials	2012.11
Soojin Park	Nature Nanotechnology	2012.11
Pann-Ghill Suh	Nature reviews. Cancer.	2012.11
Pann-Ghill Suh	Nature communications	2012.12
Yoonkyung Do	Cancer Cell	2013.01
Hyun-Woo Rhee	Science	2013.03
Chunghun Lim	Science	2013.05

UNIST Research Performance

Hosted government-supported research projects with a total of 95 billion KRW in core research areas

- 2 World Class University (WCU) projects: 16.3 billion for 5 years
Developing technology for energy harvest and Storage via Technology Convergence Nano Science and Technology for Advanced Diagnostics and Personalized Medicine
- The Green Energy Materials Development Center : 20 billion for 5 years
Establishing Research foundation and Developing technology for Green Energy
- The New Growth-Engine Project : 19.1 billion for 5 years
Developing technology for Flexible Solid Film Battery
- Science Research Center: 6.9 billion for 7 years
Center for Cell to Cell Communication in Cancers (C⁵)
- IT Research Center: 5 billion for 4 years
Developing materials for lithium secondary battery for portable electric devices
- Basic Research Lab (BRL): 4.9 billion for 5 years
MOF-based New Generation Convergence Materials
TonEBP transcription factor in chronic kidney disease and renal inflammation, and development of novel anti-inflammatory agent
- Development on Green Electric Vehicle Parts and Research Infrastructure: 2.1 billion for 5 years
Developing materials for Green Electric Vehicle

Excellent Young Investigator Award

- 2011 Hyunhyub Ko and Young Sam Kim :2.1 billion for 5 years
- 2012 Bum Suk Zhao and Jang Hyun Choi: 1.4 billion for 3 years

Selected as the best institution in Technology Transfer & Commercialization

Selected as one of 2012 Top Ten Science and Technology News

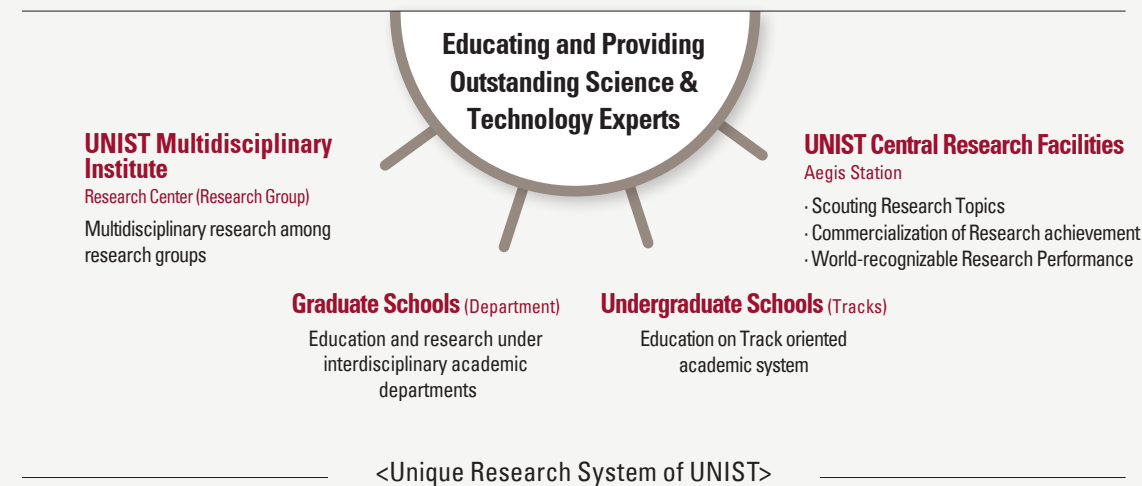
- Technology for highly efficient non-precious metal electrocatalysts for the Electric Vehicle

Technology for Battery Materials for Mobile IT Devices-Transferred to an Ulsan-based Company

- 6.4 billion KRW, the highest cost for the technology transfer from university

UNIST's Distinguished & Advanced Research System

UNIST is making outstanding research achievements through organic cooperation and close networks among track-oriented convergence undergraduate programs, research & educational graduate programs of convergent academic system, UNIST Multidisciplinary Institute (UMI) and UNIST Central Research Facilities(UCRF).



UNIST Multidisciplinary Institute(UMI)

UNIST Multidisciplinary Institute(UMI) was founded to advance the excellence and efficiency of UNIST core research. Groups of or individual professors, including research professors, are leading knowledge innovation and promoting industrial technology and national competitiveness by working on basic science and advanced applied science in the UMI.



UCRF(UNIST Central Research Facilities)

The UNIST Central Research Facilities Center (UCRF) was established in 2009 for the purpose of enhancing the research capability of UNIST through the sharing of expensive equipment, the promoting of interdisciplinary studies, and by establishing networks of professionals specialized in analysis and instrumentation. The UCRF possesses more than 200 state-of-the-art pieces of research equipment, including a clean room and a machine shop. In addition, the UCRF offers advanced training courses and seminars to help users learn the skills and analytical methods required for the effective and efficient utilization of this equipment.

UCRF	
Radioactive Isotope Lab	Radiation Safety Control
<i>In Vivo</i> Research Center	Strain Preservation Zone / Small Animal Zone / BSL-2 Zone / <i>in vivo</i> Imaging Behavior Study
Biomed Imaging Center	Zero drift motorized system / Virtual microscopy / LSCM With SIM & live / TIRF microscopy / All-in-one confocal system / Bio imaging navigator / Micro-view Imaging system
Machine Shop	CNC Workshop / Shape manufacturing / 3D measurement / Material Test / Welding CAD/CAM/CAE
Nanofabrication Lab	Photo Lithography process / Thin film process / Etch process / Measurement Packaging
Environmental Analysis Center	Environmental analysis / Pre-treatment / Sampling preparation
Analysis Lab	Electron microscopy / X-Ray analysis / Spectroscopic Analysis / Surface analysis / Mass analysis / Thermal analysis





Education

Explore the New World of Advanced Science and Technology by 'Convergence'

UNI★STAR stands for UNIST students who shine like stars in the sky. UNI★STAR is opening up their own new research area based on the interdisciplinary study and convergence knowledge. UNI★STARs, dreaming to be scientists for the prosperity of humankind, will be true shining stars in the science and technology world. By the new academic system, applying to 2014 school year, UNIST will lead the global research on the advanced science and technology, and will stand shoulder to shoulder with world leading universities.



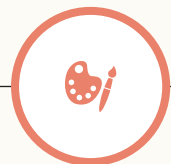
Division of General Studies



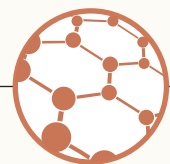
Mechanical & Nuclear Engineering



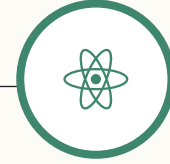
Urban & Environmental Engineering



Design & Human Engineering



Materials Science & Engineering



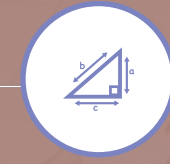
Energy & Chemical Engineering



Electrical & Computer Engineering



Life Sciences



Natural Science



Business

Division of General Studies



School of Mechanical and Nuclear Engineering

Planting a solid foundation of science and cultural education

The Division of General Studies (DGS) is responsible for students' general cultural education during their freshmen year. DGS offers courses in Mathematics and basic sciences (Physics, Chemistry, Biology) as well as basic IT and management courses that provide a solid foundation for students when they study major fields of their choice. In order to cultivate a wide intellectual horizon, an innovative creativity, and a harmonious personality for each student we offer essential courses in humanities, social sciences, English, and arts.

Math / Physics / Chemistry / Biology / IT / Management / English / AHS (Arts, Humanities & Social Sciences) / Language / Free Elective



Dreaming of the Convergence of Science and Emotion

Man Hee Byeon (Division of General Studies, Outstanding Student Selected by Admissions Officer System)

I would like to study biomedical science and nano chemistry, and the convergence study strategy of UNIST caught my attention. Now, I am a UNI★STAR in the Division of General Studies preparing for future in-depth study. Students study calculus, physics, chemistry, biology, engineering and other selective general courses in their freshman year. Arts & creativity, Culture & Creativity and other courses are also provided to complete their educational needs. This is one of UNIST's strongest points. The convergence of science and cultural education will become a reality at UNIST.

Breaking through the limitation of high-tech science

The School of Mechanical and Nuclear Engineering is carrying out a variety of research fields, including mechanical design, manufacturing & management, system analysis, and many nuclear applications for the sake of energy safety. The school focuses on world-class research and education in order to nurture creative experts and scholars who can contribute to the development and advancement of cutting-edge industries.

Track

Mechanical Engineering

Thermodynamics, Fluid Mechanics, Solid Mechanics, Dynamics, Machine Design, Advanced Materials Processing, Laser-Assisted Manufacturing, Micro/Nano Machining, MEMS, Biomedical Products, Controls and Mechatronics, Acoustics, Tribology etc.

Nuclear Science and Engineering

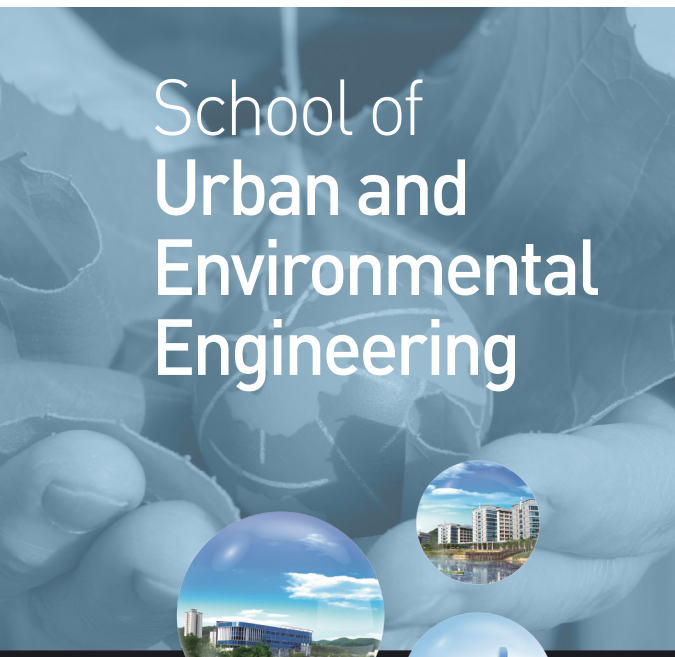
Research Reactors, Pressurized Light Water / Heavy water Reactors, Next-Generation Nuclear Reactors, Nuclear Thermo-Hydraulics, Nuclear Fuel and Cladding, Nuclear Structural Materials, Magnetohydrodynamics, and Nuclear Radiation Applications



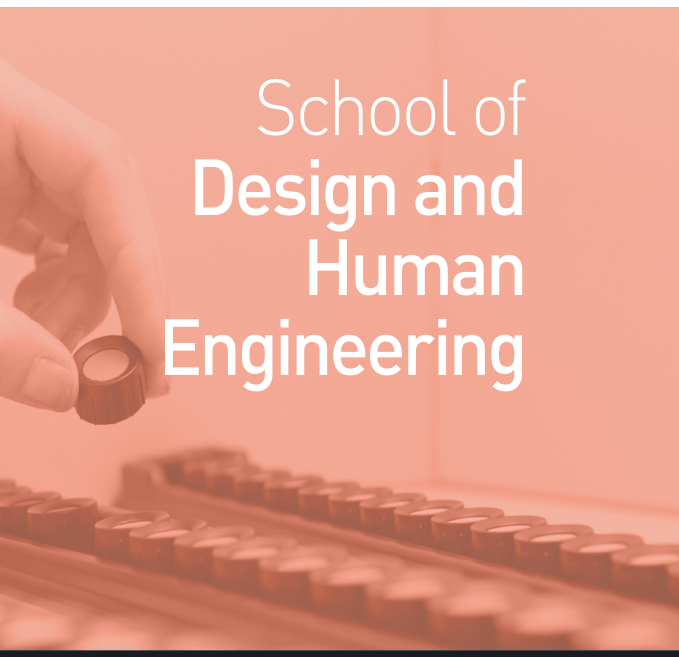
Presenting New Vision of Convergence Study

Dong Wok Kim (School of Mechanical and Nuclear Engineering, 2012 Convergent Science Supporting Program, Korea Foundation for the Advancement of Science and Creativity)

I have always aspired to learn about mechanics since my childhood and I was so curious about how these complicated machines were designed. This curiosity made me major in mechanical engineering without any hesitation. Mechanical engineering has the possibility to be a center of convergence study. Students in our school will grow to become young, promising scientists presenting a new vision to the convergence science and technology field by completing interdisciplinary majors like mechanical-design and mechanical-electrical & computer engineering. Currently I study mechanical system design, thermo-fluid and power engineering and I want to be a lifelong learning scientist.



School of Urban and Environmental Engineering



School of Design and Human Engineering

Dreaming about natural friendly cities

Environmental pollution and climate change caused by industrialization are directly related to the survival of human beings. Therefore, the School of Urban and Environmental Engineering focuses on environmental protection, sustainable development, and improvement of human welfare. The School of Urban and Environmental Engineering is committed to developing innovative technologies in the fields of urban and environmental engineering and educating leaders who will have a large impact on our profession and society.

Track

- Environmental Science and Engineering** Pollution Control and Analysis, Climate Modeling, Environmental Fate Models, Remote Sensing, and Hydrology
- Urban Infrastructure Engineering** Planning, Design and Management of Sustainable and Resilient Urban Communities
- Disaster Management Engineering** Natural Hazard Monitoring/Prediction, Sustainable and Resilient Infrastructure, Disaster Risk Reduction/Prevention, Water Resources and Flood Management



Saving People from Natural Disasters

Nak Bin Choi (School of Urban and Environment Engineering, 2012 Award of United Nations Environment Programme)

Environmental pollution and climate change caused by industrialization and urbanization are directly related to the survival of human society. The importance of such environmental issues made me decide to study this field. The small, dedicated, and friendly environment makes this school special. All students, as well as professors, are able to concentrate on the research and study effectively in this friendly and harmonious school. I was able to receive an award from the UN due to this atmosphere. I would like to be an expert in developing innovative technologies in the fields of urban and environmental engineering.

Complete convergence of design and science, creating future lifestyle

The School of Design and Human Engineering focuses on theoretical and practical studies on innovative design creation by investigating all aspects of product and product-service system development including needs finding, strategy establishment, planning, conceptualization, analysis of human capabilities and limitations, system integration, manufacturing and business implementation. A wide range of curricula will help students become global experts, creatively innovating in diverse areas across design and engineering.

Track

- Industrial Design** Modeling principles, Creative Thinking, Design Method, Design Engineering, Design Strategy and Commercialization
- Human and Systems Engineering** Ergonomics and System Engineering, System Thinking and Problem Solving Capability



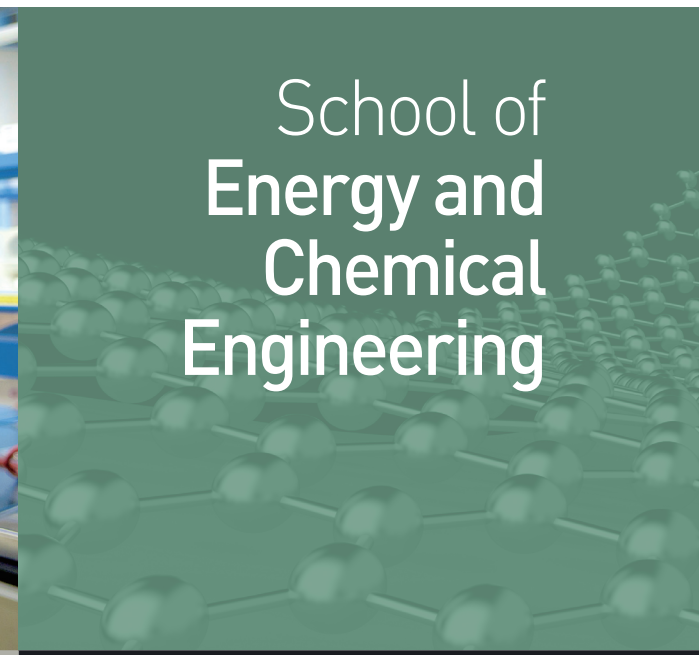
Looking for My Own Inspired Solution

Ji Eun Bae (School of Design & Human Engineering, Silver A' DESIGN AWARD)

After finishing my first exam as a freshman, I became skeptical about being tested on the problems which have only one 'correct answer'. By chance, I took a class of the School of Design and Human Engineering, and I found that there are many courses which gave us a chance to find our own solutions. I decided to major in the School of Design and Human Engineering without a second thought. In this school, students are able to have various project experiences in industry-institute collaboration as well as academic research. My first goal is to be a designer who can invent something that will improve the quality of life for many people. I would like to be a designer who inspires others.



School of Materials Science and Engineering



School of Energy and Chemical Engineering

Seeking innovative materials for advanced industry

Material science and engineering is an interdisciplinary field which emphasizes the study of processing-structure-property relations in materials. The School of Materials Science and Engineering covers the study of conventional materials as well as most advanced materials, including nano materials, and beyond and cultivates experts for those research areas.

Track

- Materials Science** Mechanical, Electrical and Chemical Application of Advanced Materials, Synthesis and Processing of Advanced Material, Structure and Properties and Advanced Analysis
- Nano Materials Engineering** Design and Synthesis of Nano materials, Processing and Properties of Nano Materials, and Nano Devices Fabrication



Exhilarated by Learning and Studying

Bo Ram Lee (Graduate student, Department of Materials Science Engineering, Published in 'ACS NANO', 2012)

I chose to study engineering because I would like to develop practical applications based on basic science. I have been interested in light-emitting diode (LED) devices, and solar cell technology because of my interest in optical science. Synergy generated by the great relationship between professors and students, as well as collaboration between each lab, is enhancing the overall research capability. I was able to publish my research work in ACS Nano because of this synergy. Classroom theory and laboratory research organically combine without any barriers at the School of Mechanical and Advanced Materials. The school provides the best environment for study and research.

Finding a clear solution for Earth's energy problem

The School of Energy and Chemical Engineering combines chemical engineering principles with research into energy conversion and storage. Students can learn fundamental science and engineering principles to improve the quality of life on earth and solve the most challenging issues of the 21st century. The field of Energy and Chemical Engineering encompasses a wide range of interests including green chemical processes, chemical engineering, advanced materials, and energy conversion and storage. Students can achieve in-depth knowledge and hands-on experience on catalysts, nanomaterials and devices, polymers, fine chemicals, applied molecular chemistry, and other chemical and energy engineering-related subjects.

Track

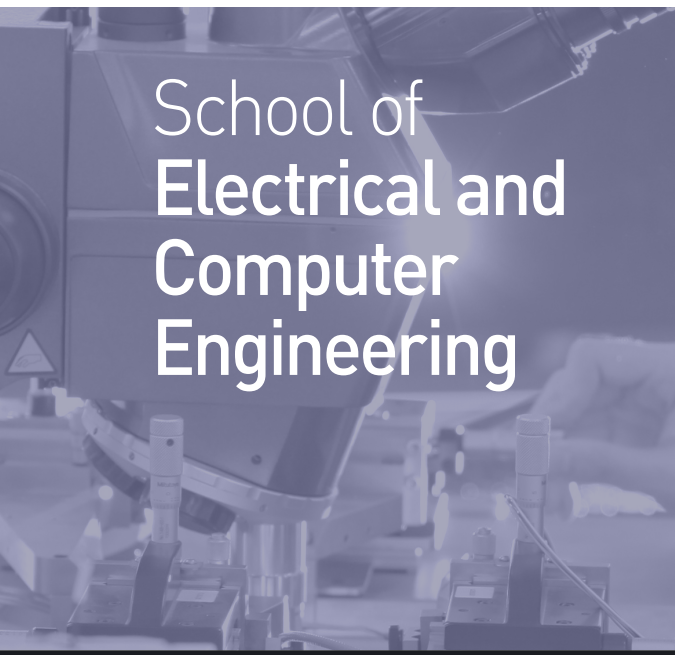
- Energy Engineering** Application of the Fuel Cell, Solar Cell, and Energy Storage Devices such as Lithium ion and Polymer cells, Production, Use, and Storage of Hydrogen and its application
- Chemical Engineering** Thermodynamics, Chemical Reaction Engineering, Transport Phenomena, System and Process Design, and Advanced Knowledge on Chemistry Industries



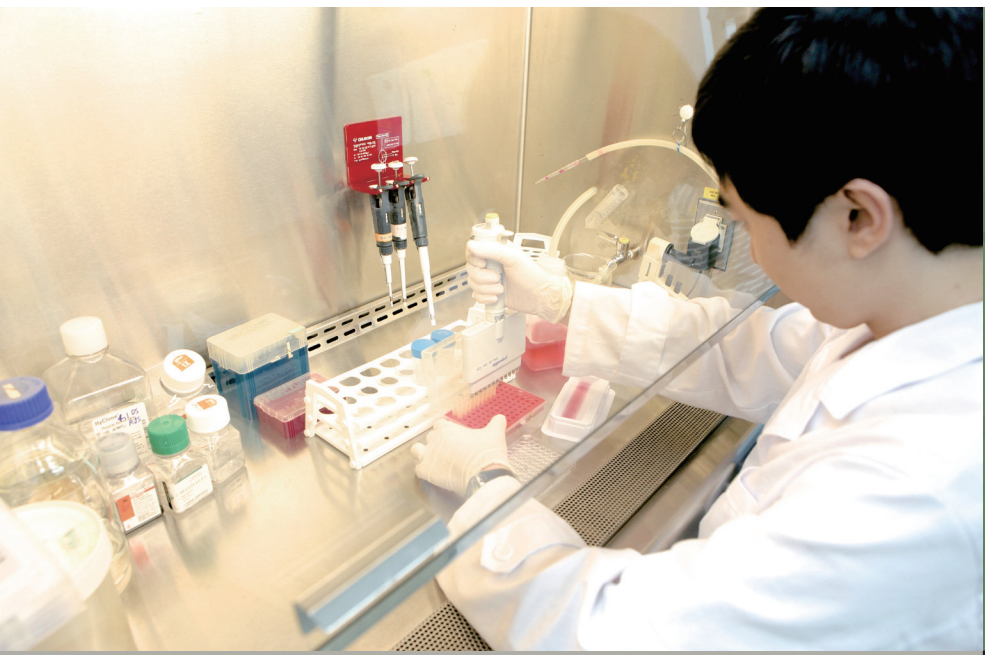
Honored to Be Praised by World Famous Scholars

Gwang Woo Kim (Graduate student, Department of Energy Engineering, Published in 'Nano Letters' 2013)

I became interested in the development of innovative materials applicable to IT technology while I was taking the class of 'Fundamentals of Energy materials' during undergraduate years. The faculty members of our department actively participate in research exchange with other international scholars and we get much inspiration and stimulation from those activities. I was honored to publish a research article in the journal of ACS Nano this year, under the guidance of my professor. The moment that the world famous scholars, Prof. Rodney Ruoff and Prof. Manish Chhowalla praised my research work, would be my life-long memory.



School of Electrical and Computer Engineering



School of Life Sciences

Showing the way to a "SMART & EASY" World

The School of Electrical and Computer Engineering is dedicated to educating students in interdisciplinary studies that will serve our future society. Our mission is to contribute not only to Ulsan's world-leading automotive, shipbuilding, and petroleum industries but also to industries and societies world-wide through the Division for Information/Communication Technology for Human Convenience, one of the UNIST multidisciplinary institutes. The school also provides enabling technologies for the future way of life through the convergence of electrical and computer engineering with new nano, bio, and environmental technologies.

Track

- Electrical Engineering** Designing integrated circuits to develop information, Communications and Control Systems
- Computer Science and Engineering** Computer Hardware Systems, Operating Systems, Programming Languages, Compilers, Algorithms, Computer Networks, Computer Graphics, and Artificial Intelligence



Making Self-Thinking Robotics Come Alive

In Sik Kim (School of Electrical and Computer Engineering, Published in Evolutionary Bioinformatics, 2012)

I applied for the School of Electrical and Computer Engineering for the in-depth study of computer engineering. I am learning the principles associated with semiconductors, as well as various computer programs and operating systems. Computer systems are some of the greatest human inventions. Computers make countless tasks possible but it is yet impossible to virtualize the mechanism of the human brain with present technology. As a computer engineer, my ultimate goal is to develop a robot to assist mankind. I would like to make a new machine optimized to think, apart from a computer's common functions.

Exploring the mysteries of life

The School of Life Sciences aims to improve human health by interdisciplinary research and education in biological science and biomedical engineering through the convergence of fundamental biology, nanotechnology, and various engineering principles. In order to meet the increased needs in health care and advanced medical theragnostics, the School of Life Sciences strives to train creative global leaders through interdisciplinary research and education programs.

Track

- Biological Sciences** Age-related diseases of diabetes, cancer, and neuroscience, research on regenerative medicine using stem cells
- Biomedical Engineering** Biochips, Biomedical devices, Biomimetics, Biomaterials, Molecular Imaging, Tissue Engineering, Drug Delivery, and Bio-Robots, etc.



Convergence Research, My Precious Treasure

Jun Sun Min (School of Life Sciences, Award of the Ministry of Education, Science and Technology, 2013)

I was attracted to UNIST because it offers general courses during the first year. I navigated all the areas and chose the School of Life Sciences. I felt that biology suited me the best and it is applicable to various areas. Everyone can participate in the research if they have passion since the School of Life Sciences features high-tech research facilities. These aspects helped me to receive the Award of the Ministry of Education, Science and Technology. It also provides wide convergence research opportunities with active cooperation with other areas. These research experiences on basic life science and novel convergence area will be a valuable asset in the future.



School of Natural Science



School of Business

Challenging for the nobel prize by exploring basic science

Natural Science strives to contribute to human life through finding and understanding basic rules. Historically, the convergence of basic science and engineering has been a key process for the advance of human civilization. The School of Natural Science has been recruiting several top researchers, and has been selected as one of the International Business Belt Campus Research Centers. This school is ready to soar to the apex of science and technology.

Track

- Physics** Theoretical particle physics and Cosmology, Astrophysics, Solid State Physics, Soft Condensed Matter Physics, Biophysics, Plasma and Beam Physics, Atomic and Molecular Physics, and Optics.
- Chemistry** Physical, Organic/ Inorganic Chemistry, Biochemistry, Materials/ Polymers/ Nano Chemistry and Chemical Biology
- Mathematical Sciences** Mathematical Physics, Mathematical Biology, Engineering Applications, Medical Sciences, Mathematical Finance and Applied mathematics



Innovating the World on the Border of Science

Ki Young Cho (Graduate student, Department of Physics, Published in Langmuir, 2011)

A scanning tunneling microscope (STM)-an instrument for imaging a surface at the atomic levels-, transistors-electronic innovation-, and miracle material graphene-stronger than iron and higher in electrical conductivity than copper-. What do these have in common? All those great inventions were made by researchers from the natural sciences. The study of natural science is a broad, diverse, and multi-disciplined area that in time will eventually unlock the secrets of our world and universe. The truth found by scientists will bring the new era of human life. By choosing to enroll in the School of Natural Science, you will also have the chance. Why don't you be a pioneer to make the next great innovation?

Cultivating global experts who know technology and business

The School of Business educates students both in technology and management to be creative global business leaders in today's dynamic economy. The School offers academic courses on various business areas including Technology Management, Information Systems, Finance, International Business, Marketing and Entrepreneurship.

Track

- Management** Organization Behavior, Economics, Statistics and Data Analysis, and Marketing and Decision Making
- Finance and Accounting** Mathematics/ Science, Economics/ Management Mind, Accounting and Financial Management, Investment Analysis, Financial Market Theory, and Financial Decision Making



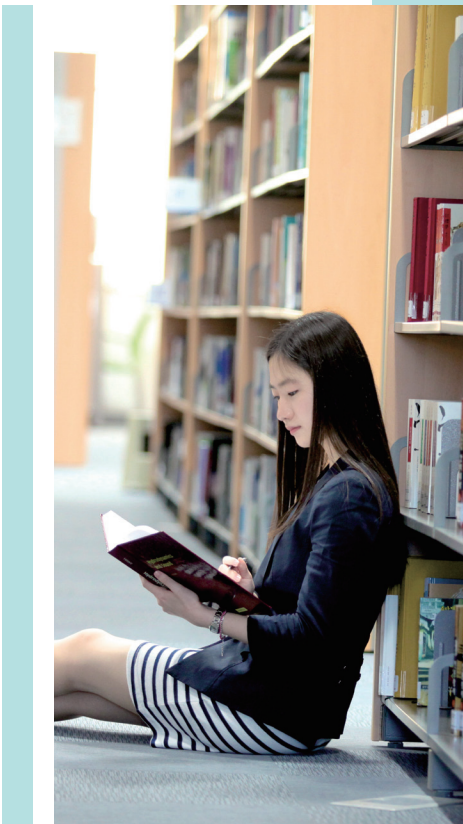
Pursuing More Scientific Business Management

Min Su Cho (School of Business, Best Article Award of APIEMS 2012)

I would like to contribute to society through empirical research and by breaking the barriers of business management research. Analytic and scientific research in business management is my primary interest. UNIST is a university specialized in science and technology, and it makes analytic empirical research possible. The School of Business runs both the Graduate School of General Management and the Graduate School of Technology Management. These two graduate programs generate a synergic effect of empirical research on diverse business management areas and helped me to receive the Best Article Award of APIEMS last year.

Scholarships and Supporting Programs for Undergraduate Students

UNI★STARs don't have to worry about high tuition. UNIST also provides rich culture and exchange programs to help students to broaden their academic and cultural experience.



Off-Campus Scholarships

The Presidential Science Scholarship

National Science and Engineering Scholarship

National Humanities Scholarship

Kyungdong Scholarship

- Admission Fee and Full Tuition
- Allowance for textbooks (Max 2,000,000 KRW/yr)

Other Off-campus scholarships (Students are selected according to each foundation)

On-Campus scholarships

Full Tuition paid for all freshmen

UNI★STAR Scholarship

Students with high academic ability with the potential to be global leaders in creative science and technology

- Admission fee and Tuition Allowance
- Allowance for textbooks (Max 2,000,000 KRW/yr)
- Financial support for study abroad

Scholarship for Study Abroad

Freshmen with outstanding performance

Provide travel and living expenses for participants, (Max 5,000,000 KRW)

Merit Based Scholarship

Full Tuition Fee for students with over 3.3 GPA, Half Tuition Fee for students with over 2.7 GPA

UNIST Dream Scholarship (Need-based)

UNIST Work-Study Program for students with needful family circumstances, 40 hours/semester

Provide living expenses

International Exchange Programs

Student Exchange Program

Provides students with the opportunity to study abroad at eligible foreign universities for one semester or one year (U. of Michigan, Virginia Tech, Eindhoven University of Technology, University of Strathclyde etc)

Undergraduate Research Opportunities Program (UROP)

Encourages UNIST undergraduates to explore and conduct in-depth scientific projects at facilities overseas (Harvard University, Georgia Institute of Technology, U. of Michigan, Rutgers University, U. of California, Irvine, Hong Kong University of Science and Technology, and NASA etc.)

IAESTE Internship (International Association for the Exchange of Students for Technical Experience Internship)

Provides the opportunity for students to experience international industries, research institutes, universities and other business organizations.

Culture Exchange Program

Improves students' proficiency in other languages like English during the academic semester or vacation at foreign institutions

Student Academic Activities Program

Allows the students to participate in international conferences and academic affairs related to their majors and interests.

Summer Session

Designed for UNIST students who wish to make use of the long summer term and improve their English skills, travel abroad and earn academic credits towards their major at a foreign institution (University of California, Berkeley, University of California, LA)

Mecca of Convergence Research, UNIST Graduate School

The UNIST graduate schools are conducting active interdisciplinary research based on international networks with global leading researchers. The state-of-art research facilities, interdisciplinary research environment made by the passion of young, and promising scientists, and the academic system based on these great specialties, will generate the tremendous synergic effect beyond our expectations.



Supporting Programs for Graduate School

Experience UNIST Graduate School

U-SURF (UNIST Summer Undergraduate Research Fellowship)

U-WURF (UNIST Winter Undergraduate Research Fellowship)

· **WHEN** : 4-weeks in Summer/Winter break

· **WHO** : Juniors, seniors and graduates majoring in a related field

U-VISIT (UNIST Open Lab)

· **WHEN** : Four times a year

· **WHO** : Juniors, seniors and graduates majoring in a related field and interested in UNIST graduate school



Scholarships For Fostering Global Scientists

Nine Bridges Fellowship

· **WHO** : The combined Master's-Doctoral courses or the Doctoral courses

· **BENEFIT** : 90,000,000 KRW for 3 years (Selected students are not allowed to also hold an RA/TA or other scholarships)

Nobel & Star Fellowship

· **WHO** : The combined Master's-Doctoral courses or the Doctoral courses

· **BENEFIT** : 90,000,000 KRW for 3 years + International Lab Support Max 10,000,000 KRW

(International and UNIST professor's joint contribution (not allowed to also hold an RA/TA or other scholarships))

GM Intern Fellowship

· **WHO** : Qualified graduate students who wish to have opportunity of GM(USA) internship program

· **BENEFIT** : 5,000,000 KRW / 6months (+ additional support from research fund)

UNIST Global Ph.D Fellowship

· **WHO** : Global Ph.D. Fellowship students

· **BENEFIT** : Additional support for International Conference (Max 4,000,000 KRW)

RA(Research Assistant) / TA(Teaching Assistant) Stipend

· **[Engineering Field] Master's students** : Above 940,000 KRW / month Doctoral students : Above 1,140,000 KRW / month

· **[Management Field] Master's students** : Above 840,000 KRW / month Doctoral students : Above 1,040,000 KRW / month

Use of dormitory

· UNIST graduate school offers all students on-campus dormitory.



Cultivating World Demanded Management Experts Graduate School of Technology Management

Energy Commodity Trading & Financial Engineering

The Energy Commodity Trading & Financial Engineering program will give students the knowledge and skills required to become a highly qualified trader in energy commodity fields such as international finance, financial risk management, supply chain management, and derivative accounting. The Energy Commodity Trading & Financial Engineering program will be of value for students who wish to become an expert in the financial management of energy firms, energy industry capital projects, energy trading and risk management. This school will provide the best educations on the Energy Commodity Trading. UNIST is providing the first class education on ECTFE to Ulsan, which is the centre of the petrochemical industries in the world and the place of North-East Asia Oil Hub.

Business Analytics

Students in the Business Analytics program will be trained for careers in a variety of business fields and will be an analytic expert who is good at analyzing and interpreting business phenomena. The program consists of business knowledge courses, analytical technique training, and an analytic project. The program will help students to gain insight into business complexity in the big data age

GSTM Scholarship and Supporting Programs

GSTM Experience Program

- U-VISIT (UNIST Open Lab)
- UNIST Graduate School Lab Touring
- 4 times a year (Quarterly Program)
- 3rd/4th year undergraduates and graduates interested in UNIST GSTM

GSTM Program Session (Seminar)

- National Seminar Touring (Pre-application required)
- 2 times a year
- 3rd/4th year undergraduates and graduates interested in UNIST GSTM

GSTM Scholarships

- Graduate School of Technology Management Scholarship
- Scholarship for the GSTM Students
- Tuition fees paid for UNI★STARS in a good academic standing

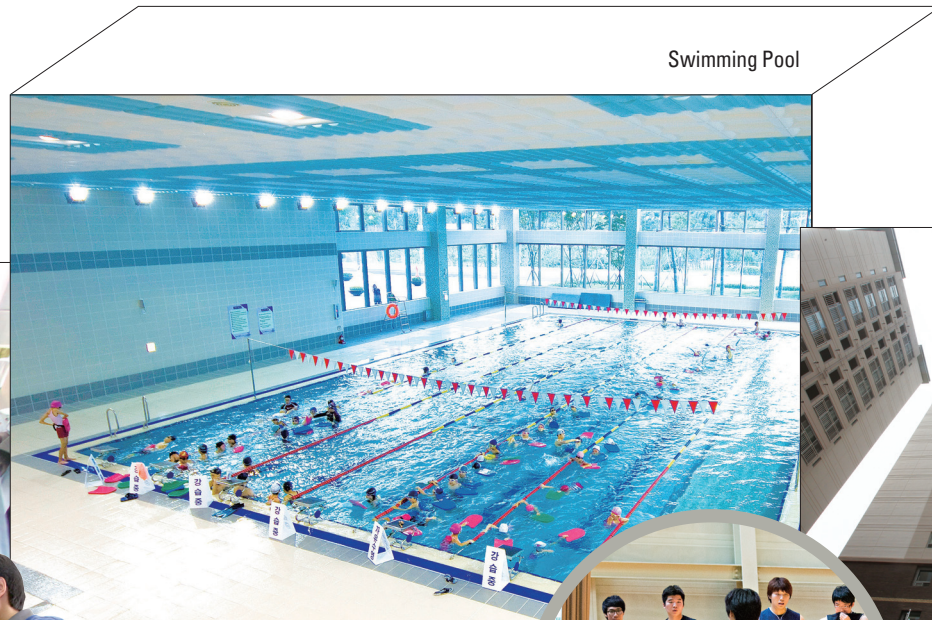
Teaching Assistant (TA) is also available.

For more detailed information, please visit (<http://gstm.unist.ac.kr>)

Campus Life

UNI★STARs are the best at enjoying youth life, too.

UNI★STARs are deepening their culture and personality through various cultural programs and special lectures as well as enjoying campus life through diverse club activities and festivals.



Swimming Pool



Basketball Court



Dormitory



Festival



Magic Show

Library

The mission of the UNIST Library is to provide access to and delivery of information resources to UNIST students, faculty, and staff in support of the research and instructional mission of the University. The Library develops, organizes, and preserves collections for optimal use and provides links to remote information sources. The Library provides resources and services to non-UNIST users to the extent possible.

- 1F: Super Computing Center, IT zone and International Center
- 2F: Multimedia zone and Group study room
- 3F~ 4F: Reading area and study area

Sports Center

UNIST Sports Center is equipped with a fitness center, a swimming pool, indoor golf ranges and a gymnasium for various indoor sports. It is open to students as well as the community.

An outdoor stadium is provided for soccer, track and other athletic sports. It is also a place for festivals and club activities.

- Swimming Pool/ Screen Golf
- Squash Court/ Fitness Center
- Basketball Court/ Badminton Court

Dormitory

The UNIST student dormitory provides the comforts and private life with Single/ Double occupancy rooms equipped with internet, laundry and other facilities.

The student council acts for the welfare and convenience of dormitory students, representing their interests and demands. It hosts an "Open House" contest to promote relations among students and "UNIST Club Day" with a famous music DJ for the students to release stress.

- UNIST offers all students on-campus dormitory.
- 7 buildings, about 3,000-student capacity
- A Family apartment building is under construction.

Enjoy your campus life!

Where Passion, Ambition, and Dreams are alive!!!

UNIST provides a variety of programs which can fulfill student's culture needs in culture all year around. Special lectures by Nobel laureates, special culture programs including sand arts show, magic show, and Korean music band show have been offered and will be continued. UNIST also helps students to build good social relationship by providing various cultural enrichment programs.

- Special Lectures by distinguished and prominent figures
- Culture programs
- Club Activities



CAMPUS MAP

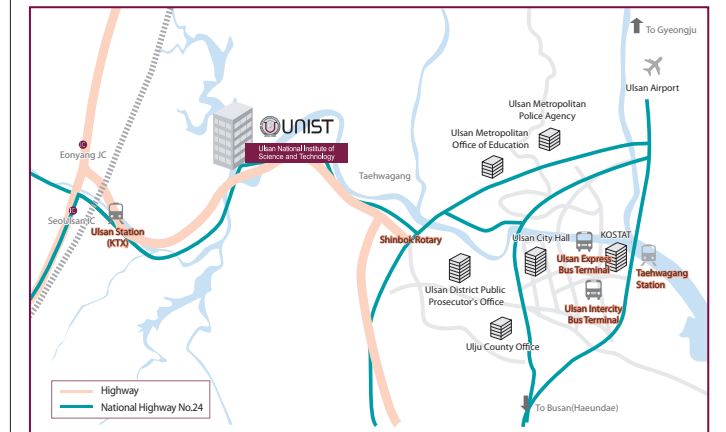
- ① 102 Natural Science Building
- ② 104 Engineering Building I
- ③ 106 Engineering Building II
- ④ 114 Technology Management Building
- ⑤ 201 Main Administration Building
- ⑥ 202 Library
- ⑦ 203 Student Union Building
- ⑧ 205 Gymnasium
- ⑨ Advanced Biological Materials Research Center (tentative English name)
- ⑩ Stem Cell Research Building
- ⑪ Machine Manufacturing Building (tentative English name)
- ⑫ 301-307 Student Dormitory
- ⑬ Faculty Apartment



Eco-Friendly Campus where Human, Nature and Technology live together

High-tech eco-campus. UNIST is aiming eco-friendly campus along with Harvard University, and Cornell University starting from design and construction. Now, the dream of global leaders starts at UNIST.

DIRECTIONS



By Train

Take bus no. 337 from Ulsan KTX Station (Tongdosa), or bus no. 327 or 807 to UNIST. It takes about 5 minutes by taxi.

By Car

Kyungbu Highway -> West Ulsan IC -> Road 24 to Ulsan -> UNIST (10 minutes from West Ulsan IC)

By Airplane

Take bus no. 402 or 452 from the airport and exit at Taehwaru. Take bus no. 807, to UNIST. For the 5003 KTX Limousine, exit in front of Gulhwa Jugong Apt., then take bus no. 337 or 733, to UNIST. More information can be found on the Korean Airline or Asiana Airlines Homepages. It takes about 30 minutes by taxi.

By Express Bus

Take bus no. 133, 733, or 337 at the Ulsan Express / Intercity Bus Terminal to UNIST, or take bus no. 327 or 807 to UNIST. It takes about 20 minutes by taxi. Take bus no. 733 at Shinbok rotary (the first bus stop after entering Ulsan) to UNIST. It takes about 10 minutes by taxi.

The dream to present happiness to humankind will come true in the eco-campus of UNIST

