UNIST

COLLEGE OF NATURAL SCIENCES

COLLEGE OF NATURAL SCIENCES

HISTORY

The Establishment of UNIST

Center for Soft and Living Matter was Established

Center for Multidimensional Carbon Materials was Established

Prof. Tae-Hyuk Kwon (Dept. of Chemistry) was appointed as the 2nd Dean of CNS

SEP. 2010

MAR. 2014

SEP. 2020

SEP. 2007

OCT. 2012

OCT. 2014

SEP. 2022

Graduate School of Natural Sciences was Established

Undergraduate School of Natural Sciences was Established

Promoted to College of Natural Sciences, Prof. Dongsu Ryu(Dept. of Physics) was appointed as the 1st Dean of CNS

ORGANIZATION

College of Natural Sciences

UNIST Basic Science Institute	Physics	Mathematical Sciences	Chemistry	IBS Campus Site Lab
Quantum Photonics Institute	Astrophysics & Laser Plasma	Applied Mathematics	Medicine & Drug Discovery	CMCM Center for Multidimensional Carbon Materials
Fusion Plasma Stability and Confinement Center	Soft Matter & Biological Physics	Number Theory	Carbon Neutrality & Green Catalyst	
Center for Super Functional Materials	Quantum Matter & Optical Physics	PDE and Analysis	Emerging Materials Discovery & Analysis	CARS Center for Algorithmic and Robotized Synthesis
X-Dynamic Research Center			Digital AI Chemistry	
Center for High Energy Astrophysics				

WHY CNS, UNIST?

The World's Top Researchers lead UNIST College of Natural Sciences.

2 CNS faculty was selected as the World's Top 1% Researcher (Total 9 UNIST faculty was selected)

Highly Cited Researchers 2023

Clarivate

Kwang Soo Kim   Dept. of Chemistry _ Emeritus Professor
Selected for 6 consecutive years

Rodney S. Ruoff   Dept. of Chemistry
Director of IBS Center for Multidimensional Carbon Materials
Selected for 10 consecutive years

CWTS Meaningful metrics

Reiden Ranking ranked

No.1 in Korea for 7 consecutive years

THE WORLD UNIVERSITY RANKINGS

THE the World in Emerging University Evaluation in 2023 ranked

No.1 in Korea, No.10 in the World

QS WORLD UNIVERSITY RANKINGS

QS Asian University Evaluation for Paper Citation in 2023 ranked

No.2 in Korea, No.25 in Asia

Specialist

With a population of over 500 students, CNS is committed to providing students with educational experiences that prepare them to succefully become future leaders and innovators in their field of area. In order to strengthen students' global capabilities, all classes are conducted in English and are always open to foreign students.

Global Research Internship

To enhance students' research experience and to cultivate global capabilities, CNS is operating to send undergraduates to overseas universities for 1:1 exchange. Selceted students will belong to the laboratory and contribute to the lab's ongoing project with local researchers. This program recruits in the fields of Physics, Mathematical sciences, and Chemistry.

DEPARTMENT OF PHYSICS

UNIST

Department of Physics guides students to become experts
not only in the specialized research areas of modern physics but also in various
interdisciplinary fields such as electronics, materials science, and energy science.

Leading University in Quantum Information

- Opertaing a Micro Major in Quantum Information for Undergraduates
- Free use of IBM Q Network (Quantum Computing Cloud) for all UNIST Members
- Established Center for Training Specialists in Quantum Information Science

21 Faculties & 3 Research Groups

Astrophysics & Laser Plasma

Kyujin Kwak Nuclear Astrophysics	**Dongsu Ryu** High Energy Astrophysics	**Min Sup Hur** Laser-Plasma Theory

Soft Matter & Biological Physics

Jaeup Kim Soft Matter Statistical Physics	**Chae Un Kim** Soft Matter, Structural Biophysics	**Cheol-Min Ghim** Complex Systems, Active Matter
Joonwoo Jeong Soft Matter Experiments	**François Amblard** Biological and Statistical Physics	**Tsvi Tlusty** Living and Soft Matter Theory

Quantum Matter & Optical Physics

Woojin Kwon Quantum Vortex Matter	**Daisik Kim** Terahertz Nanotechology	**Je Hyung Kim** Quantum Photonics
Seon Namgung Hybrid Device	**Kibog Park** Superconductor Device	**Kunook Chung** Optoelectronic Device
Noejung Park Quantum Mechanics	**Hyeong-Ryeol Park** Ultrafast Laser, Nanostructure	**Changhee Sohn** Quantum Phenomenon
Seok Hyung Lie Quantum Information Theory	**Yoon Seok Oh** Quantum Phyiscal Properties	**Hosub Jin** Topological Electronics

DEPARTMENT OF MATHEMATICAL SCIENCES

Department of Mathematical Sciences trains creative thinkers and experts well-versed in various mathematical theories through an education that encompasses both pure and applied mathematics.

Leading University in Machine Learning & AI

- Operation on Machine Learning & AI Major Courses
- Hold an annual International Workshop on AI & Big Data Analysis
- 'Core.Today', Start-up Company using AI based Korean Text Clustering System

14 Faculties & 3 Research Groups

Applied Mathematics

Yunho Kim
Mathematical Image Analysis

Pilwon Kim
Nonlinear and Complex Dynamics

Rak-Kyeong Seong
Mathametical Physics, AI

Chang Hyeong Lee
Mathematical Biology, Epidemic Modeling

Bongsoo Jang
Computational Mathematical Sciences

Chang Yeol Jung
Numerical Analysis, Computations

Jin Hyuk Choi
Mathematical Finance

Number Theory

Chol Park
Mod-p / p-adic Langlands Program

Hae-Sang Sun
Zeta Function, Continued Fractions

Jaehyun Cho
Analytic Number Theory

PDE and Analysis

Bongsuk Kwon
Nonlinear Waves From Fluid Mechanics

Hantaek Bae
Mathematical Analysis of Viscous Fluids

Youngae Lee
Second Order Elliptic PDEs

Kyudong Choi
Incompressible Fluids

DEPARTMENT OF CHEMISTRY

Department of Chemistry is composed of world-class researchers. In addition to traditional research areas, we cultivate experts in cutting-edge interdisciplinary fields like energy science and nano chemistry through AI-based digital chemistry.

Leading University in Emerging Chemistry & Technology

- Key area : AI Synthesis, Drug Discovry, Carbon Neutrality, Green Catalyst, Quantum Chemistry
- Having 2 World's Top 1% Researcher (HCR) and 2 IBS Campus Site Lab (CMCM, CARS)
- Lots of Faculty have Start-up company & Technology Transfer for Excellent Research Outcome

27 Faculties & 4 Research Groups

Medicine & Drug Discovery

Tae-Hyuk Kwon Photodynamic Therapy, X-Dynamic	**Jung-Min Kee** Drug Discovery	**Duyoung Min** Nano Bio Dynamics
Cheol-Min Park Medical Chemistry	**Ja Hyoung Ryu** Supramolecular Therapy, Nanomedicine	**Jaeheung Cho** Biomimetic Chemistry

Carbon Neutrality & Green Catalyst

Hyunchul Oh Hydrogen Energy Research	**Changho Yoo** Carbon Utilization and Storage	**Wonyoung Choe** Carbon Neutrality, Metamaterials
Sung You Hong Regiochemistry	**Jan-Uwe Rohde** Organometallic Chemistry	

Emerging Materials Discovery & Analysis

Oh-Hoon Kwon Ultrafast Microscopy	**Bong Soo Kim** Organic Transistors	**Yung Sam Kim** H-bond Dynamics
Myoung Soo Lah Metal-Organic Frameworks	**Yung Doug Suh** Advanced Molecular Probing	**Thomas Schultz** Spectroscopy
Bum Suk Zhao Molecular Motion Control	**Young S. Park** Organic Synthesis	**Kyoseung Sim** Soft Organic Electronics
Ho Jin Emerging Nanometerials	**Rodney S. Ruoff** Synthesis of Carbon Materials	**Christopher W. Bielawski** Synthetic Micromolecular

Digital AI Chemistry

Kwang Soo Kim Superfunctional Materials	**Seung Kyu Min** Quantum Chemistry	**Geunsik Lee** Quantum Simulation	**Bartosz Grzybowski** Artificial Chemical Intelligence

ib^S Institute for Basic Science Campus Site Lab

Aiming at the world's highest level of basic science research,
IBS was established in November 2021 by Republic of Korea.
Out of 31 Centers nationwide, 3 belong to UNIST, and which of 2 are in CNS.

CMCM
Center for Multidimensional Carbon Materials

Rodney S. Ruoff

Center for
Multidimensional
Carbon Materials

CARS

Bartosz Grzybowski

Center for
Algorithmic and
Robotized Synthesis

UNIST Basic Science Institute

To conduct strategic research in the field of basic science, UBSI was established
in May 2019 by UNIST. UBSI creates a stable research environment for researchers
and promotes balanced growth across various academic disciplines.

Noejung Park

Quantum Photonics
Institute

Min Sup Hur

Fusion Plasma
Stability and Confinement
Center

Geunsik Lee	Tae-Hyuk Kwon	Dongsu Ryu

Center for
Super Functional
Materials

X-Dynamic
Research Center

Center for
High Energy
Astrophysics

COLLEGE OF
NATURAL SCIENCES