

Incubating Talents Needed in the Industry

Samsung Electronics Software Expert Nurturing Program

This is a program launched in partnership with Samsung Electronics to foster highly skilled software developers who will be leading the 4th Industrial Revolution.

Samsung Electronics Semiconductor Track Program

To develop specialists in the semiconductor technology, a special training course has been designed for both undergraduate and graduate students. Upon completion of the course, the students will join the DS Division of Samsung Electronics to apply their expertise.

LG ELECTRONICS

Smart Convergence Specialized Course Track

For the objective of joint development of technologies and incubation of high quality human resources, the track supports KRW 18M for each selected undergraduate and MS student as the annual scholarship fund. The track also supports KRW 20M annually for each selected PhD student. Selected students are also provided with the chance to join LG Electronics.

LG Innotek Track Program

The program is designed to train specialized R&D engineers needed for technology development at LG Innotek. Every year, approximately 10 undergraduates and 10 graduate students are selected as the recipients of the LG Innotek scholarship. After graduation, these students will join the company to lead new developments in the R&D Department.

Program for Talent Incubation for Advanced Mold Technology

This scholarship program is for graduate school students who have received training in mold technology and is designed to help nurture and expand their skills in the field. The selected students receive preferential treatment in the recruiting process and an all-expenses-paid scholarship.

Naver Track

The track supports mid and long-term research cooperation, new professors, scholarship for undergraduate and graduate students, University-Industry cooperation lectures, and practices to support computer science and relevant area experts.

Program for Talent Incubation and Recruitment for CJ CheilJedang

Through the University-Industry Cooperation with CJ CheilJedang, this program aims to foster specialized engineers with expertise in the biological, food, and material fields. The top students from the program in the chemical and biomolecular engineering field are selected to receive a tuition waiver or scholarship

Energy Expert Nurturing Project

This is a program specialized in developing experts on core technologies related to energy generation and chemical product manufacturing based on Cxgas conversion. These experts will take the lead in a new growth engine for Korea.



Admission Information



UNDERGRADUATE

<http://admission.sogang.ac.kr>

GRADUATE

<http://gradsch.sogang.ac.kr>



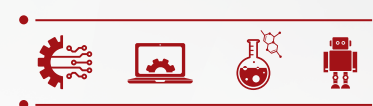
[04107] 35 Baekbeom-ro, Mapo-gu, Seoul, Republic of Korea

TEL 02-705-8629 FAX 02-705-8630

<http://enge.sogang.ac.kr>

SOGANG UNIVERSITY

COLLEGE OF ENGINEERING



Taking the Initiative in Developing Advanced Technologies that will Inspire and Improve



Developed the World's 1st Ultrasonic, Photoacoustic, and Fluorescent System for Convergence Medical Imaging

The research team led by Professor Tai-kyong Song of the Electronic Engineering Department developed a converged medical imaging system that can be used to track the spread of breast cancer. Thanks to this new technology, doctors will be able to minimize the side-effects and complications that arise from biopsies and will be able to more accurately diagnose cancer metastasis. It is also projected to improve accuracy in tumor removal, helping cancer patients drastically.



Artificial Intelligence (AI)

With the recent emergence of the 4th Industrial Revolution, people are paying more attention to the fields of artificial intelligence which is an enabling technology for autonomous vehicles, AlphaGo, and blockchains. As such, demand for engineers is rapidly growing across the board, from private companies to government agencies. Several fields, including natural language processing, data mining, machine learning and optimization, are working together to achieve ambitious goals, such as the development of human-like computers. The inter-disciplinary research on the internet-of things (IoT) in particular will be able to propel the 4th Industrial Revolution market forward in the near future.



New Paradigm in Chemical Engineering, C1 Gas Refinery Project Team

The C1 Gas Refinery Project Team, led by Professor Jinwon Lee of the Chemical and Biomolecular Engineering Department, is investigating synthesis and processing technologies in order to produce high value added chemical materials based on C1 gas, which is not generated through conventional, oil-based chemical engineering. The project team develops conversion techniques for C1 gas, via innovative approaches using biological, chemical, and convergence technologies. This project will serve as a stepping stone for the next-generation chemical engineering.



Biological Tissue Robot Development, Sogang-Harvard Disease Biophysics Research Center

The Sogang-Harvard Joint Research Team led by Professor Jungwoo Choi, Head of the Disease Biophysics Research Center, was established to build a world-renowned technology hub for human-on-a-chip technology, at the department of Chemical and Biomolecular Engineering. The research team developed a robot which operates via biological tissue without the use of additional electricity, for the first time in the world. The robot proved the potential for the development of robot which can run entirely on biological tissue. If this is indeed possible, it will be the first robot to move without the use of any power unit, such as electricity. It is projected that the robot will be utilized in developing bio sensors for diagnosing diseases in the future.



Overcoming Paraplegia by Developing Wearable Robot Technology

Professor Kyungchul Kong and his research team developed Angelegs, a wearable robot developed for the people with paraplegia. Angelegs is an exoskeleton robot for senior citizens who have difficulties completing daily tasks because of paresis and muscular weakness. The robot enables the elderly to work without the need for canes or other traditional support tools. In addition, none-resistance technology applied to the robot makes it so that the wearer does not feel the weight of the robot or any resistance from the device, making it a smooth and seamless use. Technology for managing the wearer's health by applying the IoT technology are also being developed. Professor Kyungchul Kong recently received a bronze medal in the 2016 Cybathlon, an international robot Olympic Games, and ranked the third in the 2017 UAE Robotics for Good.



Development of Next-generation Energy Storage Material, Samsung Future Technology Development

The research team led by Professor Junhyuk Moon is researching a new energy storage device that will replace lithium cells. The research team owns the source technology to manufacture a carbon electrode material which uses a semiconductor process. The ultimate goal of the team is to develop a high-performance battery element by synthesizing electrodes with high energy density based on developing technology to control the nano-structure and properties of carbon.



ISSUE

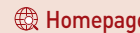
The leading actor of the 100 technologies of the future, the 'Wearable Robot'

WalkON Suit, developed by Professor Kyungchul Kong(Mechanical Engineering Dept.), is a walking robot that supports the lower body. It demonstrated Sogang University's remarkable engineering technology in the 2018 Paralympic Torch Relay and won the bronze medal in the 2016 Cybathlon competition. Further, it was awarded the Grand Prize in the 2017 Korea Invention Patent Exhibition and selected as one of the 100 technologies of the future by the National Academy of Engineering of Korea.





DEPARTMENT OF ELECTRONIC ENGINEERING



Homepage

<http://ee.sogang.ac.kr>



E-Mail

eeabeek@sogang.ac.kr

Established in 1969, the Department of Electronic Engineering is founded on Catholic faith and the Jesuit philosophy of education. Leveraging advanced education and research methodologies, the Department employs a holistic approach to fostering creative individuals and driven global leaders in engineering. Under the care of 25 professors devoted to teaching and research, 150 graduate and 450 undergraduate students are committed to attaining professional knowledge and to conducting research on RF and communications, semiconductor and integrated circuit, information and systems, computer/embedded, and system/internet.

•• Faculty Members ••

Name	Area of Interests
Gilcho Ahn	Low-voltage, low-power and high speed mixed-mode integrated circuits
Jinwook Burm	High-speed / RF / sensor circuits
Wooyoung Choi	Semiconductor device / process, nano-electromechanical devices
Yong Choi	Medical imaging instrumentations, radiation detectors, medical image processing
Daehyoung Hong	Mobile / wireless communication systems / networks
Sunyoung Hwang	Computer architecture
Juwook Jang	Mobile networks, smart phones
Jinho Jeong	MMICs and RF power amplifiers
Okhyun Jeong	Mobile device technology
Yong Jee	Electronic system packaging
Sukju Kang	Display system design
Gyeonghwan Kim	Pattern recognition, computer vision, embedded systems
Hongseok Kim	Energy ICT convergence, network resource management and optimization
Kwangsoo Kim	Power semiconductor devices and processes, SiC power semiconductor
Younglok Kim	Digital signal processing for communication, radar and biomedical systems
Haengseon Lee	Antenna, EMI / EMC, EM simulation
Seunghoon Lee	Data converters, mixed-mode ICs
Hyungmin Park	Speech enhancement and recognition, audio processing, multimedia
Raehong Park	Digital image processing, computer vision, video coding, pattern recognition
Wonjin Sung	Mobile wireless communications
Jaewoo So	Mobile communications, communication networks
Taikyong Song	DSP system design, medical imaging systems, point-of-care & molecular imaging
Yangmo Yoo	Biomedical imaging systems, image-guided therapy, distributed healthcare
Kwangseok Yun	MEMS / NEMS, sensors & actuators, lab-on-a-chip
Sangwon Yun	Microwave and millimeter wave devices

•• Post-graduation Career Paths ••

Many graduates continue their professional career paths in industries in electronics, computers, semiconductors, automobiles, broadcasting, communications, and financial services. Some graduates launch their own start-ups to commercialize their technologies and ideas. Government officers are also among the popular positions our graduates are taking. Master's and Ph.D. degree holders utilize their expertise in specialized areas of research to work at government agencies and corporate research centers in Korea and abroad. Many graduate degree holders also stay in academia to become professors and professional researchers, and contribute to the advancement and fostering of young engineers.



for Success in Your Major

The goal of the department is to make every graduate an expert in ICT and electronic engineering and to ensure graduates are able to adapt to the fast-changing environment worldwide. To this end, students are required to have understanding of physical phenomenon, mathematical knowledge, and computer programming capability. Therefore, students should be interested in physics, mathematics, and computers. These abilities are key ingredients for success for any given field of study including electronic engineering. Since skill in all these fields is not easy, students must have focus and patience with their studies.



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



Homepage

<http://cs.sogang.ac.kr>



E-Mail

csadmin@sogang.ac.kr

The Department of Computer Science and Engineering is dedicated both to offering a wide array of classes to help students acquire professional knowledge and to collaborating with domestic and international research institutions and industries in order to leverage the joint research network across different sectors. As the core element of knowledge engineering, the computer industry considered globally active field in research and investment, and consequently, the industry has been supported and fostered at the national level under the auspices of the Korean government. As the industry grows, the demand is also growing for computer specialists. The Department of Computer Science therefore aims to focus on the research and development of cutting-edge technology and to foster talents to lead the industry in the future.

•• Faculty Members ••

Name	Area of Interests
Hyeongsoo Chang	System modeling and optimization
Myungwhan Choi	Network systems and security
Insung Ihm	Computer graphics/high-performance visual computing
Sungwon Jung	Spatial and mobile databases, data mining, and blockchain databases
Jihwan Kim	Spoken language processing
Juho Kim	CAD & VLSI
Saejoon Kim	Machine learning, quantitative Finance
Sungwook Kim	Network Design and Management
Youngjae Kim	Distributed computing and operating systems
Myungwan Koo	Intelligent spoken dialogue interface and system
Hyukjun Lee	Embedded computing, computer architecture, deep Learning
Jongho Nang	Multimedia system
Kyungwhan Oh	Multi-agent system, intelligent agent, user modeling
Seog Park	Database
Sooyoung Park	Software engineering
Sungyoung Park	Blockchain and software engineering
Unsang Park	Computer vision, pattern recognition, and machine learning
Jongsuk Rim	VLSI design
Jungyun Seo	Natural language processing, artificial Intelligence, machine learning
Jungmin So	Intelligent connected systems
Jihoon Yang	Machine learning, artificial intelligence, data mining

•• Post-graduation Career Paths ••

Computers are used in almost every field, so the field of entry for graduates is very diverse. Many students play an important role in R&D as IT companies such as Samsung Electronics, LG Electronics, Google, Microsoft, and other foreign IT companies such as Naver, Daum, NC Soft. In addition, financial and consulting companies, financial and consulting firms, and financial venture companies are under way. Also, if you want to continue your studies after graduation, you can do in-depth research at Sogang University's Graduate College of Computer Science, and most graduate students are able to do research projects and receive most of your tuition.

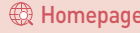


for Success in Your Major

In computer science and engineering, it is essential to have the ability to analyze and solve problems based on mathematical and logical thinking. In addition, it is recommended to have interest in convergence with various fields and to be driven in learning about cutting-edge IT technologies.



DEPARTMENT OF CHEMICAL AND BIOMOLECULAR ENGINEERING



Homepage

<http://chemeng.sogang.ac.kr>



E-Mail

sgbie@sogang.ac.kr

The Department of Chemical and Biomolecular Engineering seeks to broaden an understanding and to promote the application of basic and applied science. The Department goes beyond the existing scope of chemical engineering to foster leaders in electronics, information, biotechnology, polymer and energy, and environment industries by working hand in hand with various research centers (materials and process technology, plant automation, energy and environment technology, etc.) within the Research Institute for Basic Science and Industrial Technology. The Department supervises the Supercritical Fluid Group, Bioelectronics Group for biomolecules, and other such project groups. The Department also takes a leading role in a joint collaboration for bio convergence and a project for human resources development in bioelectronics, thereby offering a myriad of learning opportunities and access to profound academic research.

•• Faculty Members ••

Name	Area of Interests
Jeongwoo Choi	Nanobiochip, biomemory, stem cell chip
Jinhoon Choi	Computational neuroscience & neuroeconomics
Kyongsu Ha	Nanoscale catalysis and reaction engineering
Taewook Kang	Nanoplasmonics, optofluidics, biophysics, Integrated Bioplatfrom
Choongik Kim	Organic / inorganic hybrid electronics, printed electronics
Hyuncheol Kim	Nanomedicine, theragnosis, tissue engineering
Jungwook Kim	Soft materials based micro-systems
Keekahb Koo	Crystallization on organic and energetic materials, amino acids, pharmaceuticals core / shell structured energetic composites
Jinwon Lee	Metabolic engineering, bioenergy, industrial biotechnology, systems biotechnology
Jongsuk Lee	Green & sustainable separation
Kwang soon Lee	Process control, process modeling and simulation, CO ₂ capture process
Jongsung Lim	Supercritical extraction, fabrication of nano-particle, DDS, measurement of VLE etc
Junhyuk Moon	Nanoparticle, 3D lithography, energy storage / conversion devices
Jeongeol Na	Bioprocess engineering
Byungkeun Oh	Organic Thin Film Transistor, Organic Light Emitting Diode (OLED), Self-Assembled Monolayer (SAM), Organic Solar Cell
Seyong Oh	Biosensors and Biochips, Gene therapy
Hungmok Park	Microfluidics, fuel cells
Heewoo Rhee	Ultralow dielectrics for semiconductors, nanocomposite polymer electrolytes for PEM fuel cell and li-ion batteries, DSSC

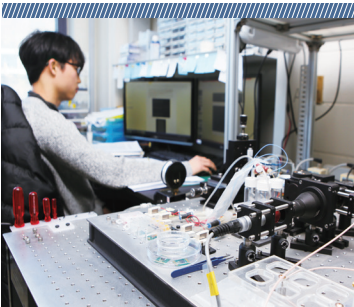
•• Post-graduation Career Paths ••

Chemical and biomolecular engineering is one of the most pragmatic areas of study and easily converges with other fields of study such as chemistry, physics, electronic engineering, informatics, biology, energy, and environmental engineering. For this reason, various fields of study have been derived from chemical and biomolecular engineering, such as nano- and bio-technology. Indeed, the domain of application continues to expand. It is expected that the graduates of our department will play pivotal roles in the industries and research fields of the future, just as they have done and currently do.



for Success in Your Major

The Chemical and Biomolecular Engineering major requires an understanding of cutting-edge fusion studies with diverse fields such as bio, energy, and environment on a strong foundation of chemical engineering based on epidemiology and dynamics. Therefore, physical and mathematical knowledge as well as a meticulous personality and logical thinking are important. The Department provides students with a choice of an intensive course based on a variety of interests such that the graduates are actively working in both companies and research institutes.



DEPARTMENT OF MECHANICAL ENGINEERING



Homepage

<http://me.sogang.ac.kr>



E-Mail

mechadmin@sogang.ac.kr

The Department of Mechanical Enginneing aims to nurture engineers who work for humanity and who have the ability to use their discipline in mechanical engineering to contribute to different sectors with multidisciplinary design and creative convergence of novel technologies. With this goal in mind, the Department ensures that its students are well-trained in basic and advanced knowledge in each of their major, giving them ample opportunities to pursue excellence, to demonstrate competence and insight, and to develop persuasive power.

•• Faculty Members ••

Name	Area of Interests
Bumkyoo Choi	Fabrication of micro-sensors, actuators, and energy harvesting chip
Bonggeun Chung	BioNano technology
Nahmkeon Hur	Development of CFD techniques and optimal design
Doyoung Jeon	Control, wearable robot, and rehabilitation engineering
Hyunyoung Jeong	Automotive safety, biomechanics, structural analysis, and design of experiments
Siyoung Jeong	Environment friendly thermodynamic systems, microfluidics, and heat exchangers
Seongwon Kang	Analysis and control of turbulent flows and combustion
Daejoong Kim	Microfluidics, energy conversion, water technology, and molecular simulation
Dongchoul Kim	Computational analysis of nano / microstructures
Naksoo Kim	Finite element analysis and design of manufacturing processes
Wonjung Kim	Bio fluid mechanics, micro fluid mechanics and biomimetics
Kyoungchul Kong	Control systems and robotics
Cheolsoo Lee	Machine design and five-axis machining
Hyunggil Lee	3-D multi-impact finite element analysis, Fracture mechanics
Seungyop Lee	Micro actuator and biomimetic device
Taesoo Lee	Optimum design, Oxygen concentrators
Jungyul Park	BioMEMS, biosensors and micromanipulatio
Choongsoo Shin	Biomechanics, motion analysis, and biomedical device design
Gihun Son	Multiphase flow, heat transfer, and power plant simulation

•• Post-graduation Career Paths ••

After receiving their BS degree, students are encouraged to apply for graduate school or enter the industry workforce. We offer both MS and Ph.D degree programs with a multi-disciplinary, in-depth curriculum covering traditional as well as emerging fields. Due to the high demand for skilled mechanical engineers, graduates of our department are highly sought out in the job market including major companies, the government, and government-funded research institutes. As mechanical engineering is one of the broadest disciplines in engineering, graduates make inroads into various related fields including bioengineering, environment engineering, electrical engineering, computer science, industrial engineering, biomedical engineering, etc.



for Success in Your Major

Mechanical engineers should have a thorough knowledge of mathematics, physical science, and mechanical engineering principles. Mechanical engineers must be able to apply their skills in practical situations with integrity. However, the most important characteristic is interest in mechanical engineering. If you are the type of who likes to take things apart in order to learn about their physical principles and improve them, then mechanical engineering is a great choice for you.