



AKC2024
12th Asia - Korea Conference 2024

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Beyond Borders: Shaping the Innovative Future Together

November 13-17, Shanghai

Conference Program



Content

Welcome	01
About AKC	02
Committee	03
Hotel Layout	05
Keynote	06
Program	07
Day 0	07
Day 1	08
Day 2	14
Day 3	22
Poster Presentation	25

Welcome

We are pleased to welcome you to the 12th Asia-Korea Conference (AKC), taking place from November 13 to 17, 2024, in Grand Mercure Shanghai Hongqiao, China! This conference is jointly hosted by Korean Scientists and Engineers Association in China (KSEACH) and The Korean Federation of Science and Technology Societies (KOFST).

The main theme of the conference is “Beyond Borders: Shaping the Innovative Future Together.” Today’s global challenges—such as climate change, energy shortages, and population aging—call for robust international cooperation. This highlights the importance of science and technology exchange across borders. However, the current international climate, shaped by competition for technological hegemony, presents significant challenges to these efforts. In this process, China is perceived as a close yet distant country to Korea.

By hosting this year’s AKC in China, we aim to explore the status and prospects of technological exchange between Korea and China, alongside strategies for cultivating the next generation of talents who will advance future collaborations. Additionally, we hope to further strengthen networks among scientists and technologists active throughout the Asian region.

We have organized 6 plenary and keynote talks, 14 technical sessions, 3 forums, 1 symposium and dedicated students presentation sessions. These will cover Innovation in Health and Diseases, Clean Energy, Sustainable Environment, Future Computing, Physical Science and Advanced Materials — all essential areas for addressing today’s global challenges.

We appreciate your active participation and enthusiasm in making this event a vibrant platform for knowledge sharing and camaraderie.


Conference Organizing Committee


President of the Korean Federation
of Science and Technology Societies (KOFST)

About AKC

The Asia-Korea Conference (AKC) is a prominent annual academic conference where international experts from major research institutions in the Asia-Pacific region, including Korea, China, Singapore, Australia, New Zealand, and Japan, gather in one place. The conference aims to promote scientific and technological cooperation between Asian countries and Korea.

While past events have primarily been held in Singapore and Australia, this year holds special significance as it will be the first time the conference is hosted in China.

Committee

Organizing Committee

Franklin Kim
ShanghaiTech University

Eunyu Kim
Duke Kunshan University

Jaehyung Ju
Shanghai Jiao Tong University

Jiyoung Lee
Nanjing Agricultural University

Yongsam Jung
Nanjing Agricultural University

Eunhye Baek
Tsinghua University

Jungbin Kim
Wenzhou-Kean University

Ho-Soek Lee
Kyung Hee University

Technical Program Committee

Choong-Min Ryu
Korea Research Institute of Bioscience
and Biotechnology (KRIBB)

Oh Soek Kwon
Sungkyunkwan University

Ho-Soek Lee
Kyung Hee University

Jung-Sik Kim
Beihang University

Sunyoung Hlee
Beijing Institute of Technology

Duckyoung Kim
Center for High Pressure Science and Technology Advanced Research (HPSTAR)

Sung-Soo Kim
University of Electronic Science and
Technology of China (UESTC)

Kihwan Kim
Tsinghua University

Feng Tian
Duke Kunshan University

Sun Tae Kim
Pusan National University

Samyoung Cho
Chongqing University

Host and Partner Organizations

Korean Scientists and Engineers Association in China (KSEACH)
The Korean Federation of Science and Technology Societies (KOFST)
Korean Scientists and Engineers Association in Singapore (KSEASG)
Korean Academy of Scientists and Engineers in Australasia (Australia and New Zealand) (KASEA)
Institute for Basic Science (IBS)
Korea-China Science and Technology Cooperation Center (KOSTEC)
Korea Innovation Center China (KIC China)
National Research Foundation in Korea (NRF)
Embassy of the Republic of Korea in China

Sponsor

Diamond



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Gold



Silver

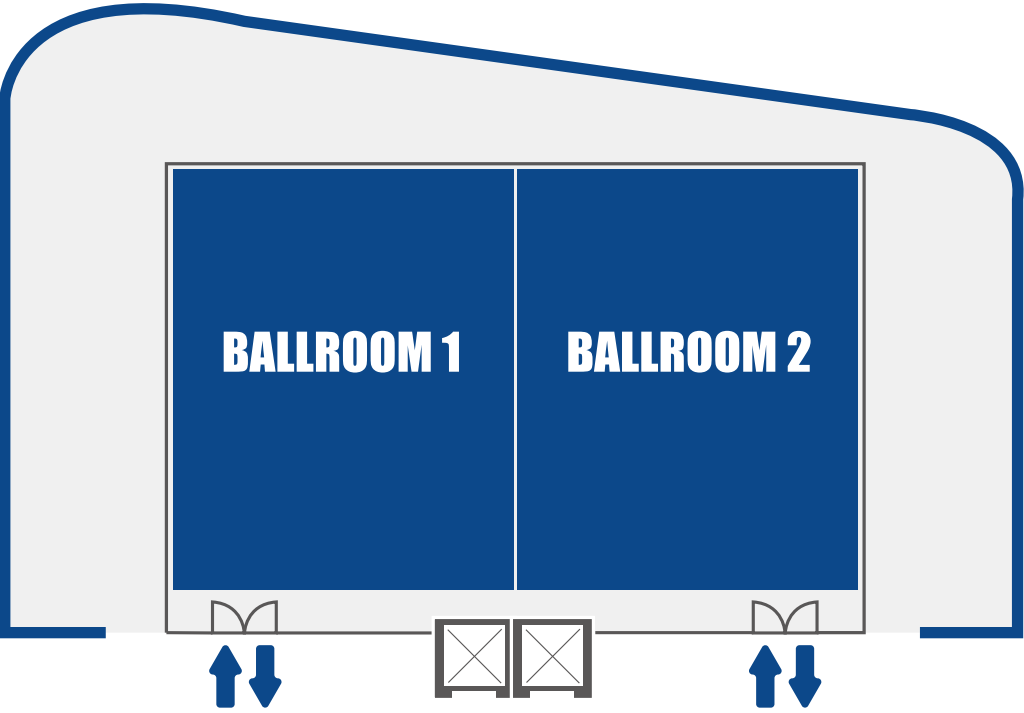


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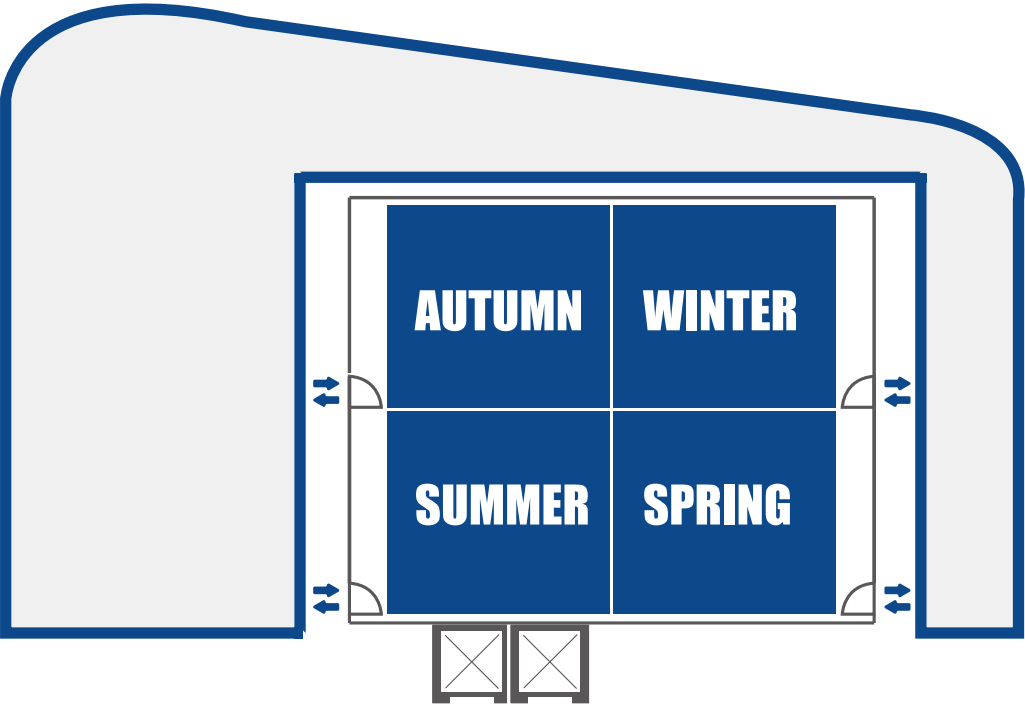


Hotel Layout

3F Ballroom



2F Spring, Summer, Autumn, and Winter room



Keynote



Keynote Session 1

KOO, Bon-Kyoung
Director
Institute for Basic Science (IBS) Center
for Genome Engineering, South Korea



Keynote Session 2

JEONG, HongSik
Professor
Graduate School of Semiconductor Materials and Devices Engineering
Dept. of Materials Science and Engineering
Ulsan National Institute of Science and Technology (UNIST), South Korea



Keynote Session 3

RYU, Choong-Min
Head of the Center
Korea Research Institute of Bioscience and
Biotechnology (KRIBB), South Korea



Distinguished Guest on Forum 1

XING, Jijun
Chairman
International Cooperation and S&T Diplomacy
Sub-commission of The Chinese Association of
Science of Science and S&T Policy Research, China



Keynote Session 4

LI, Weidong
Professor
University of Shanghai for Science
and Technology, China



keynote Session 5

JEUNG, Jihong
Professor
Future Lab
Tsinghua University, China

Program

Nov 13 (Day 0)

Welcome Evening

16:30 - 19:00	Registration
19:00 - 21:00	Welcome Dinner (Invited Participants Only) – Ballroom (3F)

Nov 14 (Day 1) Overview

Future Strategies for Korea-China Science and Technology Exchange

9:00 - 9:30	Opening Ceremony			
9:30 – 10:00	Keynote Session 1 Koo, Bon-Kyoung			
10:00 - 10:30	Coffee Break			
10:30 - 11:00	Keynote Session 2 Jeong, Hong-Sik			
11:00 - 11:45	Forum 1 Korea-China Science and Technology Exchange Forum Xing, Jijun Kim, Jun Youn			
11:45 - 13:30	Lunch			
13:30 - 15:20	Tech 1-1 Innovation in Health and Diseases A Trends in Biology I	Tech 1-2 Clean Energy A Hydrogen & Carbon Neutrality	Tech 1-3 Future Computing A Quantum Information Technology I	SME Roadshow
15:20 - 15:50	Coffee Break			
15:50 - 17:40	Forum 2 Experiences from the Korea-China Bilateral Exchange Program	Tech 2-1 — Sustainable Environment A Agriculture and Environmental Health — Innovation in Health and Disease A Trends in Biology II	Tech 2-2 Future Computing B AI applications	SME Roadshow
18:30 - 20:30	Dinner			

Nov 14 Morning (Keynote & Forum) Ballroom (3F)

9:00 - 9:04	Welcome Address	
9:04 - 9:16	Congratulatory Remarks	Tai Sik Lee KOFST, South Korea
		Young-Jun Kim Consulate General of the ROK in Shanghai
9:16 - 9:30	Award Ceremony	
9:30 - 10:00	Keynote Session 1 From Organoid Genetics to Mosaic Genetics	Dr. Bon-Kyoung Koo Institute for Basic Science (IBS) Center for Genome Engineering, South Korea
10:00 - 10:30	Coffee Break	
10:30 - 11:00	Keynote Session 2 The Cryogenic Phase Change Memory	Prof. HongSik Jeong Ulsan National Institute of Science and Technology (UNIST), South Korea
	Forum 1 Korea-China Science and Technology Exchange Forum <i>Forum organized by Korea-China Science and Technology Cooperation Center (KOSTEC)</i>	
11:00 - 11:30	Understanding Today's Science and Technology of China and My Personal Experience of China-Korea S&T Cooperation	Dr. Jijun Xing International Cooperation and S&T Diplomacy Sub-commission of The Chinese Association of Science of Science and S&T Policy Research, China
11:30 - 11:45	Over 30 years of S&T Cooperation between Korea and China	Dr. Jun Youn Kim Korea-China Science & Technology Cooperation Center
11:45 - 13:30	Lunch	

Nov 14 Afternoon I (Tech 1 & SME Roadshow)

Tech 1-1. Innovation in Health and Diseases A: Trends in Biology I Spring (2F)

Chair: Prof. Hoseok Lee (Kyung Hee University, South Korea)

Session organized by IBS

13:30 – 13:50	Membrane Proteins Unveiled: 3D Structures Illuminating Cellular Mechanisms and Advancing Molecular Biology	Dr. Ji-Hye Yun Institute for Basic Science (IBS) Center for Genome Engineering, South Korea
13:50 - 14:10	Decoding early tumorigenesis: unveiling oncogenic drivers in the liver with mosaic mouse models	Dr. Sujin Park Institute for Basic Science (IBS) Center for Genome Engineering, South Korea
14:10 - 14:30	Integrating Genetics and Bioinformatics to Enhance Biodiversity Research at the Center for Genome Engineering	Dr. Heetak Lee Institute for Basic Science (IBS) Center for Genome Engineering, South Korea
14:30 - 14:50	Exploring liver disease research using mouse models	Prof. Eun Jeong Kim Department of Biology, College of Natural Sciences, Kyungpook National University, South Korea
14:50 - 15:10	Identifying mechanically triggered settling mechanism of the <i>Pyropia yezoensis</i> 's carpospores	Dr. Sinyang Kim Institute for Basic Science (IBS) Center for Genome Engineering, South Korea
15:20 - 15:50	Coffee Break	

Tech 1-2. Clean Energy A: Hydrogen & Carbon Neutrality Autumn (2F)

Chair: Prof. Jung-Sik Kim (Beihang University, China)

13:30 – 13:50	Metal-CO2 system	Prof. GunTae Kim Shanghai Institute of Applied Physics, Chinese Academy of Science, China
13:50 - 14:10	Coupling analysis of SOEC and waste biomass resource utilization: A conceptual framework	Prof. Han Ling Peking University, China
14:10 - 14:30	Symmetrical solid oxide cells	Prof. Bingbing Niu University of Science and Technology Liaoning, China
14:30 - 14:50	Rechargeable battery technologies for boosting carbon neutrality	Prof. Yao Liu University of Science and Technology Liaoning, China
14:50 - 15:10	H2 gas sensors: its scientific foundations, IP & commercialisation	Prof. Jung-Sik Kim Beihang University, China
15:20 - 15:50	Coffee Break	

Tech 1-3. Future Computing A: Quantum Information Technology I Summer (2F)

Chair: Prof. Kihwan Kim (Tsinghua University, China)

13:30 – 13:50	Quantum Information Research in KIST	Dr. Yong-Su Kim KIST, South Korea
13:50 - 14:10	Quantum engineering with atoms and light	Prof. Gyu-Boong Jo HKUST, Hong Kong , China
14:10 - 14:30	Room temperature single photon sources	Dr. Sejeong Kim University of Melbourne, Australia
14:30 - 14:50	Optical metasurfaces for quantum applications	Prof. Dukyong Choi The Australian National University, Australia
14:50 - 15:10	Quantum optical approaches to quantum magnetism	Prof. Myungjoong Hwang Duke Kunshan University, China
15:10 – 15:30	Quantum Information Engine	Prof. Kihwan Kim Tsinghua University, China
15:30 - 15:50	Coffee Break	

SME Roadshow Ballroom 2 (3F)

Session organized by KIC China (Language: Korean/Chinese (Simultaneous Interpretation))

14:00 – 14:20	오프닝 및 축하	이진수 과기정통관 주중국대한민국대사관 謝吉華(씨에지화) 동사장 상하이기술거래소
14:20 – 14:25	MOU 체결식	재중한인과학기술자협회 / 글로벌혁신센터 (KIC 중국) / 국가기술이전동부센터
14:25 - 14:35	Keynote 1: 한국바이오산업 및 기술 발전 현황	나희준 대표 하울바이오
14:35 - 14:45	Keynote 2: 한국과학기술혁신기업의 중국진출전략	김종문 센터장 KIC 중국
14:45 - 14:55	Keynote 3: 한중크로스보더기술이전 현황 및 InnoMatch 기술 인큐베이팅 플랫폼 소개	陳超(첸차오) 총경리 국가기술이전동부센터,상하이국제기술거래시장
14:55 – 15:55	한국 기업 피칭 (PT + 투자전문가 Q&A)	(주)하울바이오 / (주)팼토이드 / (주)티엔씨인증 원 / 아이빔테크놀로지
15:55 - 16:10	Coffee Break	

Nov 14 Afternoon II (Tech 2 & Forum 2 & SME Roadshow)

Tech 2-1(a)Sustainable Environment A: Agriculture and Environmental Health Spring (2F)

Tech 2-1(b) Innovation in Health and Disease A: Trends in Biology II Spring (2F)

Chair: Prof. Jason Sewoong Lee (The University of Queensland, Australia)

15:50 – 16:10	Development of sustainable and edible coating from fruit waste	Prof. Michelle Ji Yeon Yoo Auckland University of Technology, New Zealand
16:10 – 16:30	Analysis of metabolome from an environmental indicator species as an indicator to water quality disruption	Prof. Tae-Yong Jeong Hankuk University of Foreign Studies, South Korea
16:30 – 16:50	A gastrointestinal parasite infection model for chronic stress in livestock and its impact on meat quality	Prof. Hannah Lee Lincoln University, New Zealand
16:50 – 17:10	Integrating epigenetic, metabolic and transcriptional changes associated with immunotherapy response	Prof. Jason Sewoong Lee The University of Queensland, Australia
17:10 – 17:30	Development of an open-source and automated Nextflow pipeline for PhiPSeq analysis	Dr. Preston Leung UNSW Sydney, Australia
18:30 – 20:30	Dinner	

Tech 2-2. Future Computing B: AI applications Autumn (2F)

Chair: Prof. Myunggeun Chun (Chungbuk National University, South Korea)

15:50 – 16:10	Security requirement for AI based speaker recognition systems	Prof. Myunggeun Chun Chungbuk National University, South Korea
16:10 – 16:30	The Rise of Edge Computing and IoT	Dr. Young Choon Lee Macquarie University, Australia
16:30 – 16:50	Optimized Machine Learning Model for Predicting Steel Corrosion in Reinforced Concrete by Electrical Resistivity Measurement Me	Dr. Kevin Paolo Robles Dong-A University, South Korea
16:50 – 17:10		
17:10 – 17:30		
18:30 – 20:30	Dinner	

15:50 – 16:10	한국 과학기술 국제협력 정책 및 개선방안	박병원 선임연구원 과학기술정책연구원(STEPI)
16:10 – 16:30	한국연구재단 국제협력사업 및 추진계획	정혁 소장 한국연구재단 북경사무소(NRF)
16:30 – 16:50	국제 연구성과 분석 결과 및 제안사항	박진서 센터장 한국과학기술정보연구원(KISTI)
16:50 – 17:10	한중 산학연 협력연구 현황 및 성과	김선태 교수 부산대학교
17:10 – 17:30	BP, BP+ 2024 년 주요 사업계획 및 개선사항	남주혜 연구원 한국연구재단(NRF)
17:30 – 17:50	BP, BP+ 2024 년 주요 사업계획 및 개선사항	한소정 연구원 한국연구재단(NRF)
18:30 – 20:30	Dinner	

16:10 – 17:10	한국 기업 피칭 (PT + 투자전문가 Q&A)	(주) 바스젠바이오 / (주) 오스테오바이오닉스 / (주) 브이에스팜텍 / (주) 포투가바이오
17:10 – 17:20	폐회식	
18:30 – 20:30	Dinner	

8:30 – 8:50	Plenary Session Tai Sik Lee			
8:50 – 9:20	Keynote Session 3 Ryu, Choong-Min			
9:20 – 9:50	Keynote Session 4 Li, Weidong			
9:50 – 10:20	Coffee Break			
10:20 – 12:10	Tech 3-1 Innovation in Health and Diseases B Infectious Diseases	Tech 3-2 Sustainable Environment B Urban Engineering	Tech 3-3 Future Computing A Quantum Information Technology II	Forum 3 Women Scientists Forum
12:10 – 13:30	Lunch			
13:30 – 15:20	Tech 4-1 Innovation in Health and Diseases C NanoBio Engineering	Tech 4-2 Physical Science A High Energy Physics	Tech 4-3 Future Computing C Artificial Intelligence	
15:20 – 15:50	Coffee Break			
15:50 – 17:40	Tech 5-1 Innovation in Health and Diseases D Breeding to Biotechnology in Rice	Tech 5-2 Physical Science B Quantum Phenomena in Condensed Matter	Tech 5-3 Advanced Materials	
18:00 – 21:00	Gala Dinner			

Nov 15 Morning I (Keynote) Ballroom (3F)

8:30 – 8:50	Pioneering the Final Frontier	Dr. Tai Sik Lee KOFST, South Korea
8:50 – 9:20	Asia-Pacific Infectious Disease Shield 2.0	Prof. Choong-Min Ryu Korea Research Institute of Bioscience and Biotechnology (KRIBB), South Korea
9:20 – 9:50	End-of-Life Electric Vehicle Battery Remanufacturing Enabled by Human-Robot Collaboration	Prof. Weidong Li University of Shanghai for Science and Technology, China
9:50 – 10:20	Coffee Break	

Nov 15 Morning II (Tech 3 & Forum 3)

Tech 3-1. Innovation in Health and Diseases B: Infectious Diseases Spring (2F)

Chair: Dr. Choong-Min Ryu (Korea Research Institute of Bioscience and Biotechnology (KRIBB), South Korea)

Session organized by KRIBB

10:20 – 10:40	Complementary Metal-oxide-semiconductor Photosensor-Integrated On-site Molecular Test for Foot-and-Mouth Disease Detection, Serotyping, and Foot-and-Mouth Disease-like Vesicular Diseases Differentiation	Dr. Sang-Ho Cha Animal and Plant Quarantine Agency, South Korea
10:40 - 11:00	Application of newly developed peptide aptamers to rapid diagnostic system for infectious diseases	Prof. Seonju Yeo Seoul National University, South Korea
11:00 - 11:20	Localized Immunological Memory in Cynomolgus Macaques Following SARS-CoV-2 Infection	Dr. Jung Joo Hong Korea Research Institute of Bioscience and Biotechnology, South Korea
11:20 - 11:40	The Unappreciated Role of Viral Internal Proteins in the Extracellular Compartment	Prof. Doo Jin Kim Chungbuk National University College of Medicine, South Korea
11:40 - 12:00		
12:00-13:30	Lunch	

Tech 3-2. Sustainable Environment B: Urban Engineering Autumn (2F)

Chair: Prof. Sunyoung Hlee (Beijing Institute of Technology, China)

10:20 – 10:40	AI-powered Smart Tourism 2.0	Prof. Chulmo Koo Kyung Hee University, South Korea
10:40 - 11:00	What makes an AI-powered tourism recommendation helpfulness? - Spatio-temporal efficiency perspectives	Dr. Ping Li Beijing Institute of Technology, China
11:00 - 11:20	A Study on the Cultural Entrepreneur Model for regional revitalization in jeju Island, South Korea	Hoyon Ryu Tsinghua university, China
11:20 - 11:40	서울 역사도심 도시 경관관리 정책 사례 연구	Kyeongshin Kim Yeonsei University, South Korea
11:40 - 12:00	Generative-based community sustainable tourism development	Prof. Myungja Kim Kyung Hee University, South Korea
12:00 - 13:30	Lunch	

Tech 3-3. Future Computing A: Quantum Information Technology II Summer (2F)

Chair: Prof. Samyoung Cho (Chongqing University, China)

10:20 – 10:40	Software Development for a Full-stack Quantum Computer by KISTI	Dr. Junghee Ryu KISTI, South Korea
10:40 - 11:00	Developing TCAD for integrated quantum photonic circuits	Prof. Youngik Sohn KAIST, South Korea
11:00 - 11:20	Exploring Magnetic Proximity Interactions in van der Waals Heterostructures for Quantum Information Technologies	Prof. Junho Choi Kyung Hee University, South Korea
11:20 - 11:40	Quantum acoustics: single electron-deterministic single photon conversion	Prof. Seok-Kyun Son Kyung Hee University, South Korea
11:40 - 12:00	Qubits, New Experimental Tools for Science: Challenges and Opportunities	Prof. Donghun Lee Korea University, South Korea
12:00 - 12:20	Information about quantum phases and phase transitions of matter	Prof. Samyoung Cho Chongqing University, China
12:20 - 13:30	Lunch	

Forum 3. Women Scientists Forum (다양성과 포용: 여성과학자의 도전과 기회) Winter (2F)

(Language: Korean)

10:20 – 10:40	Opening Comments	Prof. Mira Park Kyung Hee University, South Korea
10:40 - 11:00	Unconscious Bias	Prof. Sejeong Kim The University of Melbourne, Australia
11:00 - 11:20	Nearly 50% of researchers quit science within a decade, huge study reveals (women in the science field, too)	Prof. Hannah Lee Lincoln University, New Zealand
11:20 - 11:40	여성! 과학자!! 그리고	Prof. Mihye Kim Chungbuk National University, South Korea
11:40 - 12:00	Panel Discussion	Prof. Samsung Lim The University of New South Wales, Australia
12:00 - 12:10	Panel Discussion	Dr. Jiyoung Lee Nanjing Agricultural University, China
12:20 - 13:30	Lunch	

Nov 15 Afternoon I (Tech 4)

Tech 4-1. Innovation in Health and Diseases C: NanoBio Engineering Spring (2F)

Chair: Prof. Oh Soek Kwon (Sungkyunkwan University, South Korea)

Session organized by Sungkyunkwan University

13:30 – 13:50	Development of a platform for in vitro diagnostic devices for hazardous substances	Dr. Pan Kee Bae HGUARD Inc., South Korea
13:50 – 14:10	Structure-Guided Engineering of Thermodynamically Enhanced Cas9 for Efficient Gene Suppression	Prof. Yongho Kim Sungkyunkwan University, South Korea
14:10 – 14:30	Development of human-like artificial sense	Dr. Hyun Seok Song KIST, South Korea
14:30 – 14:50	Clinical metagenomics for improved surveillance and diagnosis of infections in New South Wales, Australia	Prof. Ki Wook Kim University of New South Wales, Sydney, Australia
14:50 – 15:10	Integrated Nanogap Sensors for Biomolecular Quantitation	Prof. Wan Soo Yun Sungkyunkwan University, South Korea
15:10 – 15:50	Coffee Break	

Tech 4-2. Physical Science A: High Energy Physics Summer (2F)

Chair: Prof. Sung-Soo Kim (University of Electronic Science and Technology of China (UESTC), China)

13:30 – 13:50	Introduction to Symmetry Topological Field Theories	Prof. Sungjay Lee KIAS, South Korea
13:50 – 14:10	Stability and topological nature of charged Gauss-Bonnet AdS black holes in five dimensions	Prof. Imtak Jeon Huzhou University, China
14:10 – 14:30	Duality Reductionism	Prof. Chiung Hwang USTC, China
14:30 – 14:50	Algebras and Geometries from 3d Supersymmetry	Dr. Myungbo Shim Tsinghua University, China
14:50 – 15:10		
15:10 – 15:50	Coffee Break	

Tech 4-3. Future Computing C: Artificial Intelligence Autumn (2F)

Chair: Prof. Feng Tian (Duke Kunshan University, China)

13:30 – 13:50	Exploring Effective Representations Using Hyperbolic Neural Networks	Prof. Dongmian Zou Duke Kunshan University, China
13:50 – 14:10	Computational genomic approach to interpret non-coding disease risk variants	Prof. Seong Kyu Han Inha University, South Korea
14:10 – 14:30	AI for 3D environment modeling, human computer interaction and decision making in the digital twin space	Prof. Xie Ning University of Electronic Science and Technology of China, China
14:30 – 14:50	Robustness of Deep Learning Models Against Distribution Shift	Prof. Zhiqiang Gao Wenzhou-Kean University, China
14:50 – 15:10		
15:10 – 15:50	Coffee Break	

Nov 15 Afternoon II (Tech 5)

Tech 5-1. Innovation in Health and Diseases D: Breeding to Biotechnology in Rice Spring (2F)

Chair: Prof. Sun Tae Kim (Pusan National University, South Korea)

Session organized by Pusan National University

15:50 – 16:10	Study of pollen germination and tube elongation process in rice for the new generation of hybrid rice production technology	Prof. Ki-Hong Jung Kyung Hee University/National Research Foundation of Korea, South Korea
16:10 - 16:30	Advancing the development of more phosphorus-efficient rice	Prof. Joong Hyoun Chin Sejong University, South Korea
16:30 - 16:50	Sucrose promotes flowering by degrading the floral repressor Ghd7	Prof. Lae-Hyeon Cho Pusan National University, South Korea
16:50 - 17:10	Regulation of salt tolerance by phospholipase C-mediated signaling in rice	Prof. Wenhua Zhang College of Life Science, Nanjing Agricultural University, China
17:10 - 17:30	Biosynthesis of Sakuranetin regulated by OsMPK6-OsWRKY67-OsNOMT cascade confers Ustilaginoidea virens resistance in rice	Prof. Yiming Wang Department of Plant Pathology, Key Laboratory of Integrated Management of Crop Diseases and Pests, Ministry of Education, Nanjing Agricultural University, China
17:50-	Gala Dinner	

Tech 5-2. Physical Science B: Quantum Phenomena in Condensed Matter Summer (2F)

Chair: Dr. Duckyoung Kim (Center for High Pressure Science and Technology Advanced Research (HPSTAR), China)

15:50 – 16:10	Hund's physics near the Mott transition in NiS2 under pressure	Prof. Ji Hoon Shim Pohang University of Science and Technology (POSTECH), South Korea
16:10 - 16:30	Superconductivity of metastable dihydride at ambient pressure	Dr. Heejung Kim Seoul National University, South Korea
16:30 - 16:50	Nonlocal Coulomb interactions in perovskite transition metal oxide	Prof. Bongjae Kim Kyoungpook National University, South Korea
16:50 - 17:10	Machine Learning Prediction Models for Solid Electrolytes Based on Lattice Dynamics Properties	Prof. Sooran Kim Kyoungpook National University, South Korea
17:10 - 17:30	Quantum phenomena manipulated by chemical potential	Prof. Choonkyu Hwang Busan National University, South Korea
17:30 - 17:50	Gate-Tunable Potential Barrier in a Single Graphene Layer on a Fluorocarbon Thin Film	Prof. Haeyong Kang Busan National University, South Korea
17:50-	Gala Dinner	

Tech 5-3. Advanced Materials Autumn (2F)
Chair: Prof. Yuljae Cho (Shanghai Jiao Tong University, China)

15:50 – 16:10	Neuromorphic dendritic computation using multi-gate hybrid transistors	Dr. Eunhye Baek Tsinghua University, China
16:10 - 16:30	Mechanical computing with metamaterials	Prof. Jaehyung Ju Shanghai Jiao Tong University, China
16:30 - 16:50	The re-surfing of hydrocarbon gas as early sign of battery rollover degradation	Prof. Franklin Kim ShanghaiTech University, China
16:50 - 17:10	Environmental energy harvesting towards self-powered electronics	Prof. Yuljae Cho Shanghai Jiao Tong University, China
17:10 - 17:30		
17:50-	Gala Dinner	

Nov 16 (Day 3) Overview
Next-Generation Talent Development

9:00 - 9:30	Keynote Session 5 Jeung, Jihong		
9:30 - 11:00	Student Presentation A	Student Presentation B	Poster Session
11:00 - 12:00	Coffee-Chat-Connect		
12:00 - 12:30	Closing Ceremony		
12:30 - 14:00	Lunch		
14:00 - 16:00	Leadership and Vision Workshop	Shanghai Field Trip	
16:00 - 16:30	Coffee Break		
16:30 - 17:30	KSEACH Assembly		
17:30 - 20:00	Next-Generation Leader's Exchange Dinner		

Nov 16 Morning (Keynote and Student Sessions)

Ballroom 2 (3F)

9:00 - 9:30	Future of Aging	Prof. Jihong Jeung Future Lab, Tsinghua University, China
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	Student Presentation A Spring (2F)	Student Presentation B Summer (2F)
9:30 - 9:45	Southern China Electricity Carbon Emission Reduction Pathways: LMDI-Tapio Decoupling Method Hongkwan Lee Peking University , China	Navigating South Korea’s Economic Challenges and the Importance of Personal Financial Planning Junho Jo Shanghai Jiao Tong University, China
9:45 - 10:00	The Impact of TOR-S6K-eIF5A Signaling on Translational Control is Key to Plant Root Development Sejin Choi Institute for Basic Science , South Korea	Multi-Source Video Compression with Deep Learning Hui Lan XiDian University, China
10:00 - 10:15	Characterization and Analysis of the Role of In Vivo Small Secreted Peptides (SSPs) During Rice-Blast Fungus Interactions Woojae Seo Pusan National University , South Korea	Functional Characterization of MSP1 Domains in Magnaporthe oryzae and Essential Role of K49 in Domain II for the Immune Activation Sooyeon Jeon Pusan National University, South Korea
10:15 - 10:30	Mutations in OsVIL2 Cause Anther Indehiscence by Altering Gibberellin Biosynthesis and Abnormal Cell Wall Development Dohyeon Kim Pusan National University, South Korea	Structural Behaviors of Non-Pneumatic Wheels with Discrete V-Shaped Spokes Heeseung Han Shanghai Jiao Tong University, China
10:30 - 10:45	Exploring the Panax ginseng Meyer Soil Metagenome to Uncover Antagonistic Bacteria Against Ginseng Root Rot Disease Jaeyeon Lee Institute for Basic Science , South Korea	Application of AI Machine-Vision System for Detecting Bacterial Pustule by Xanthomonas axonopodis pv. glycines of Soybean Yuhyeon Park Pusan National University, South Korea
10:45 - 11:00	Uncovering Natural Allelic Variants Linked to Leaf Rolling in Rice (Oryza sativa L.) Through Genome-Wide Association Analysis Ahrim Lee Pusan National University, South Korea	

Ballroom (3F)

11:00 - 12:00	Coffee-Chat-Connect
12:00 - 12:15	Student Presentation Awards Ceremony
12:15 - 12:30	Closing Ceremony
12:30 - 14:00	Lunch

Nov 16 Afternoon (Workshop & KSEACH Assembly)

Leadership and Vision Workshop Ballroom 2 (3F)

14:00 - 14:30	Design-ish Your Life: Insights Along the Journey	Prof. Daniel Jin Blum NYU Shanghai, China
14:30 - 15:00	For achieving the goal that you aim: write a good manuscript	Prof. Jungseog Kang NYU Shanghai, China
15:00 - 16:00	Career and Vision Workshop Panel Discussion with Invited Experts and Students	
17:30 - 20:00	Next-Generation Leader's Exchange Dinner	

KSEACH Assembly Ballroom 2 (3F)

16:30 - 17:30	KSEACH Annual Meeting (Members ONLY)
17:30 - 20:00	Next-Generation Leader's Exchange Dinner

Poster Presentations

Poster ID	Title	Name	Affiliation
BS-01	Biocontrol Potential of Peribacillus simplex IMGN10 Isolated from Romaine Lettuce Farm Soil	Seonui Jeong	Duke Kunshan University
BS-02	Identification of the Cold-Adapted Biocontrol Potential of Peribacillus frigoritolerans (IMGN5) Isolated from Virgin Soil in So	Mengwei Cheng	Duke Kunshan University
BS-03	Structural Insights into Plant Immunity: Unveiling LRR-RLK Complexes through Cryo-EM	Hyeonmin Ryu	Institute for Basic Science
BS-04	Lipid Droplets in the Spotlight: Emerging Roles in Plant Viral Immunity	Sangmin Lee	Institute for Basic Science
BS-05	Coronavirus Nucleocapsid-based Vaccine Provides Partial Protection against Hetero-species Coronavirus in Murine Models	Huiwon Nam	Chungbuk National University
BS-06	Molecular Analysis of Rice (Oryza sativa L.) Resistance to Brown Spot Related Genes	Fangyuan Cao	Pusan National University
BS-07	Genome Wide Association Study to Identify Bakanae Disease Resistance QTLs Carrying Novel Candidate Genes in Rice	Yuting Zeng	Pusan National University
BS-08	The secreted MGG40 protein from Magnaporthe oryzae induces plant immune responses in rice	Gihyun Lee	Pusan National University
BS-09	Analyzing the Role of Small Secreted Peptides (SSPs) in Immune Responses During Rice-Pathogen Interactions	Woojae Seo	Pusan National University
BS-10	Domain-Specific Analysis of Magnaporthe oryzae MSP1 Reveals K49 in Domain II as a Critical Residue for Rice Defense Induction	Soo Yeon Jeon	Pusan National University
BS-11	Defects in OsVIL2 reduce gibberellin biosynthesis, leading to anther indehiscence due to impaired cell wall development	Dohyeon Kim	Pusan National University
BS-12	Increased CTP synthase activity enhances seed development in rice	Jiyoung Kim	Pusan National University
BS-13	Exploring Nitric Oxide-Mediated Signaling Pathways during Rice-M. oryzae Interaction	Adeela Munir	Pusan National University
BS-14	Investigating the role of hydrogen sulfide in rice defense mechanisms against Magnaporthe oryzae	Clement Leonard	Pusan National University
BS-15	Comparative acetylome analysis for identifying regulatory mechanisms in two different rice seed varieties (Oryza sativa sub. Ja	Jisoo Kim	Pusan National University
BS-16	Study on Short-Day induction flowering pathway in absence of Ehd1	Gibeom Baek	Pusan National University

BS-17	Identification of breeding habitats and first report of L1014F kdr mutation in wildlife of Anopheles spp. in Republic of Korea	Hyelee Hong	Seoul National University College of Medicine
BS-18	Identifying the associations between abiotic stress tolerance and grain quality using fine-tuned temperate-adapted indica, CSA-	Na-Hyun Shin	Pusan National University
BS-19	Anti-viral activity of HDAC6 against influenza A virus mediated via suppression of viral RNA polymerase subunit PA	Yu run Miao	Nanjing agricultural university
BS-20	Pirh2 restricts influenza A virus replication by modulating short-chain ubiquitination of its nucleoprotein	junchu	Nanjing agricultural university
BS-21	Pseudorabies virus kinase UL13 phosphorylates H2AX to foster viral replication	Xiaoyu Gao	Nanjing agricultural university
BS-22	Clusterin, a Novel DEC1 Target, Modulates DNA Damage–Mediated Cell Death	Haotian Zhou	Nanjing agricultural university
BS-23	Ferredoxin reductase is critical for p53-dependent tumor suppression via iron regulatory protein 2	Ruiyu Zhai	Nanjing agricultural university
BS-24	How did African Swine Fever likely get into China: A risk assessment of ASF virus introduction into China through Prohibited Ports	Fuchun Yang	Nanjing agricultural university
BS-25	Establishing an inducible CRISPR/Cas9 mediated Knockout-overexpression System in HeLa and U-2OS cells for functional assessment of the DEK Oncogene	Shaban Muhammad	Duke Kunshan University
BS-26	Capsicum annum Seed Germination and Symbiotic Relationship with PGP Rhizobacteria in Martian Soil Simulant: A step forward in Space Agriculture	Shaban Muhammad	Duke Kunshan University
BS-27	Harnessing strong symmetry breaking finite-component system phase transition for quantum error correction	Yanzhang Zhu	Duke Kunshan University
BS-28	Snapshotting Quantum Dynamics at Multiple Time Points	Pengfei Wang	Beijing Academy of Quantum Information Sciences
BS-29	Development of a trap capable of trapping hundreds of two-dimensional ions at room temperature	Lingfeng Ou	Tsinghua University
BS-30	A Single-Ion Information Engine for Charging Quantum Battery	Jialiang Zhang	Tsinghua University
BS-31	Multi-Ion Quantum Memory: Precision Control of Individual Bases	Zhengyang Cai	Tsinghua University
BS-32	Experimental Study of Universal Scaling in Super-radiant Quantum Phase Transitions with a Single Trapped Ion	Hengchao Tu	Tsinghua University
BS-33	Epigenetic regulation of centromeric transcription and chromosome segregation by a histone H2A variant, H2A.Z	Jungseog Kang	NYU Shanghai

EN-01	Isolation and application of Cyanobacteria for biodegradable plastics	Mohsin Khan	Henan University
EN-02	Ultrasensitive Biosensors Utilizing Covalently Bonded N-Heterocyclic Carbene–Graphene Nanotransistors.	Jaehyeon Kim	Sungkyunkwan University
EN-03	Comprehensive multi-omics approach for the identification of potential bioactive materials in warm-water extracts of barley, oa	Nawon Park	Pusan National University
EN-04	Envirogenomic Approaches to Microalgae-Based Biophotovoltaics for Sustainable Energy in Dynamic Climate Regions	Hyeonsik Yoon	Kyung Hee University
EN-05	Development of Target- and Site-Selective THz biosensor for Label-free SARS-CoV-2 Detection	Yeonkyung Lee	Korea Institute of Science and Technology
EN-06	Selective Photoactivation of Human Photoreceptors in Nanodiscs for Light Modulation and Optical Applications	Yeon Kyung Cha	Korea Institute of Science and Technology
EN-07	Development and Application of a Multipurpose 3D-Printed Railway Scale Model	Euiyoul Kim	Hefei University
EN-08	Developing a scalable analytical framework for predicting the contact behavior of elastic rings against rigid surfaces	Zhipeng Liu	Shanghai Jiao Tong University
EN-09	3D Mechanical Coupling Beyond Axial-Twist	Dijia Zhong	Shanghai Jiao Tong University
EN-10	Advancing Quasi-Zero Stiffness Dynamics: An Enhanced Multi-Loading Design via Spring-Linkage Systems	Yuhao Wang	Shanghai Jiao Tong University
EN-11	Gamma-Hydroxybutyrate Detection with Naked Eyes Using Nanofibers	Chung Hyeon Lee	Sungkyunkwan University
EN-12	BRAIN-INSPIRED SPARSE TRAINING IN TRANSFORMERS AND LARGE LANGUAGE MODELS WITH NETWORK SCIENCE MODELING VIA CANNISTRACI-HEBB RULE	Yingtao Zhang	Tsinghua University
EN-13	Sparsity and Morphology in Neuromorphic Dendritic Reservoir Network with Hyperbolic Connectivity	Carlo Vittorio Cannistraci	Tsinghua University
EN-14	Contribution of energy dissipation to dynamic fracture resistance of the turtle carapace	Jingjing Zhang	Shanghai Jiao tong University
EN-15	Valorization of municipal surface water for clean water recovery and heavy metal removal towards a circular economy	Jungbin Kim	Wenzhou-Kean University
EN-16	Evaluation of membrane fouling strategies for high-recovery water reuse in semi-batch reverse osmosis	Yumiao Song	Wenzhou-Kean University
EN-17	Meta-Reinforcement Learning for Advanced Cardiac Anomaly Detection Using Audio Signal Pattern Recognition	Minki Cho	Beijing Institute of Technology
EN-18	Langmuir–Blodgett Assembly of Ti3C2Tx Nanosheets for Planar Microsupercapacitors	Matthew White	ShanghaiTech University

EN-19	Understanding the temperature dependent performance of Li-ion battery via Differential Electrochemical Mass Spectrometry	Liang Zhang	ShanghaiTech University
EN-20	Modification of Biodegradable WE43 Mg Alloys by preparation of HA-contained Coatings	Jim Kim	Tsinghua University
IN-01	The Impact of New Media Applications on Regional Tourism City Branding: A Case Study of South Korea's "Feel the Rhythm of Korea	Shin Kim	Tsinghua University



생명을 향한 연구 내일을 여는 기술

Technology for Life, Our Future



홈페이지



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NBE LAB

Nano Bio Electronics LAB
http://www.oskwonrnd.com

Prof. Kwon, Oh Seok

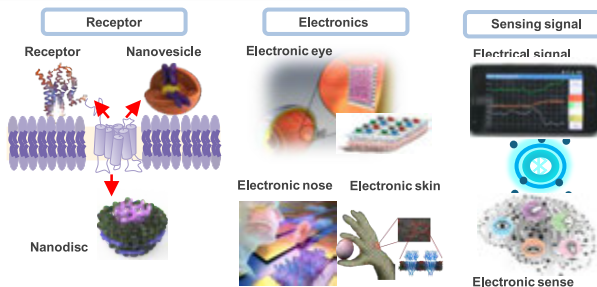
E-mail :

oskwon79@skku.edu

Tel : +82) 31-299-4113

Chem/Bio Sensor

Journals

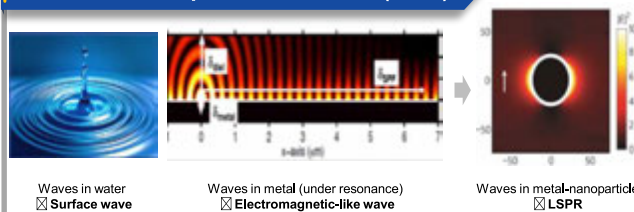


Papers



Optical Sensor

Localized surface plasmon resonance (LSPR)



Surface-enhanced Raman scattering (SERS)

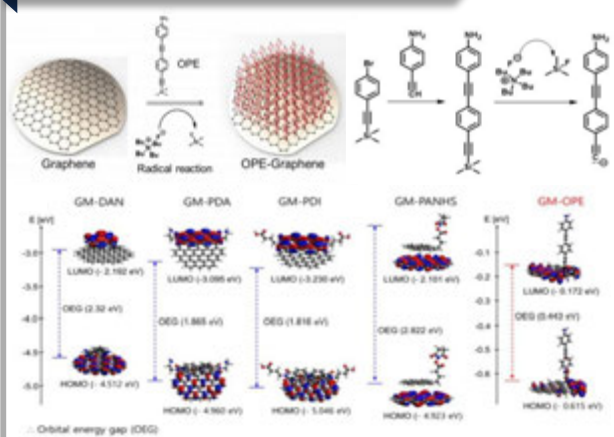


Papers



Interfacing Chemistry

Interfacing chemistry

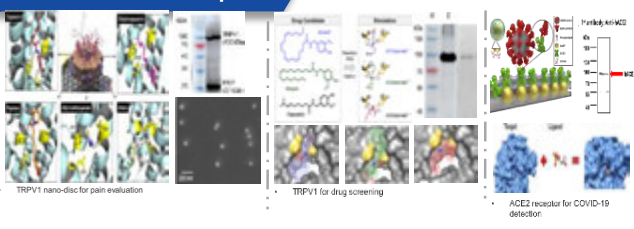


Papers

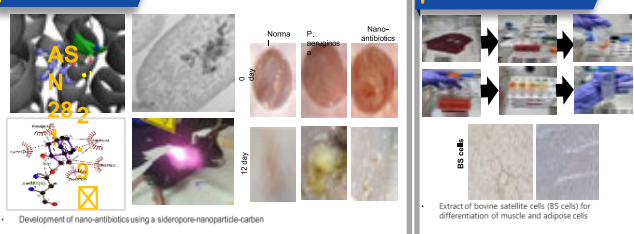


Bioengineering

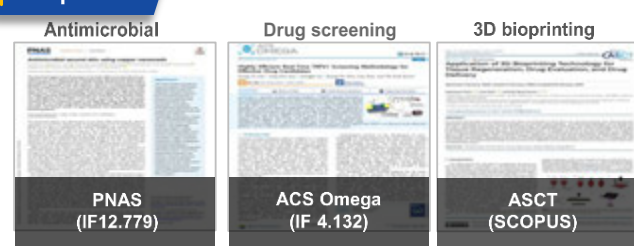
Functionalized receptors



Antibiotics



Papers



MISSION

Raising next-generation Leaders

Raising young next-generation scientists who will lead the future of Korean science

Facing challenging Study

Aims at challenging studies in the field of life science

Operating cutting-edge Infrastructure

Establishing and operating world-class infrastructure

About LSI

The life science comprises the branches of studies of life forms, i.e. microorganisms, plants, and animals including human beings. The Life Science Institute (LSI) aims at convergence research that includes neuroscience, genome engineering and protein structural biology through which we intend to unveil the fascinating nature of biology. Our Life Science Institute (LSI) pursues excellence in life science to establish world-leading life science complex in Daejeon, S. Korea.

Center for Cognition and Sociality

Since 2018



- Social neuroscience group: Study of cognition, emotion and sociality
- Brain imaging and control group: Development of brain imaging and control techniques applicable at molecular, cellular, circuit, and system levels
- Cognitive glioscience group: Gila-focused investigation on cognitive functions, diagnostic tools and therapeutic strategy in brain diseases
- Synaptic plasticity research group: Research and analysis of molecular mechanisms occurring at synapses / Visualization of synaptic changes according to specific memories such as fear memory, motor learning, and reward (compensatory) learning
- Neural circuit activity and cognitive function group: Establishment of synapse-based behavioural experiment method that combines mouse cognitive function model and optogenetics

ORGANIZATION



Center for Genome Engineering

Since 2014, renewed in 2022



- Borderless gene editing to extend the target field of genome engineering
- CRISPR-Cas9 project to utilize revolutionary AI technology in genome engineering tool development
- SOON technology to ease conditional knockout model generation in various animal models
- Mosaic genetics for advanced lineage tracing analysis coupled with genetics
- Stem cell and organoid models for advanced biological analysis

ORGANIZATION



Center for Biomolecular and Cellular Structure

Since 2018



- We decipher the 3D molecular structures of essential biomolecules such as proteins and nucleotides, cellular organelles, and disease-related pathogens by utilizing cutting-edge techniques, including X-ray crystallography, single-particle cryo-electron microscopy (cryo-EM), and cryo-electron tomography (cryo-ET).
- Through our comprehensive exploration of these molecular structures and mechanisms, our goal is to gain a profound understanding of the diverse physiological and pathological processes within living organisms.

ORGANIZATION



KSEACH 재중한인과학기술자협회

Korean Scientists and Engineers Association in China

협회 소개

재중한인과학기술자협회(재중과협)는 2015년에 창립된 조직으로, 중국 내 대학, 연구소, 기업, 정부 산하기관 등지에서 활발하게 활동하는 과학 기술 분야 전문가들로 구성되어 있습니다. 우리 협회의 주요 목표는 중국에 거주하는 한인 과학기술자들을 서로 이어주고, 회원 간의 협력과 상호 지원을 촉진하며, 한중 간 과학기술 분야에서의 교류를 증진하는 것입니다. 이를 통하여 과학 기술 분야의 혁신과 발전을 촉진하고, 한중 과학 커뮤니티 간 유대감을 강화하는 역할을 수행하고 있습니다.

활동 목표

- 중국 내 한인 과학기술자를 대표하는 네트워크 구성
- 회원들 간의 학술정보 교류와 유대 강화
- 차세대 연구자 및 학생과의 협력과 멘토링
- 한중 과학기술 학술 교류의 지렛대 역할

연혁

- 2014.03 재중 한인연구자 네트워크 모임 결성 (13명)
- 2014.04 - 2015.10 설립준비위원회 회의
- 2015.12 재중한인과학기술자협회 창립 학회, 광진호 초대 회장 선출, 협회 정제서 확립
- 2016.03 제 1차 학술대회 개최
- 2016.05 협회 홈페이지 구축
- 2017.12 제3차 총회 및 학술대회, 이우근 2대회장 선출, 협회 조직 구축
- 2020.12 제6차 총회 및 학술대회, 김기환 3대회장 선출
- 2021.12 세계한민족과학기술자 공동협의회에 19번째 국가 회원으로 가입
- 2022.12 제8차 총회 및 학술대회, 김종명 4대회장 선출

협회 활동

학술대회 및 총회

- 학술 교류, 토론회, 협회 현안 논의
- 국내외 저명 인사 초청 강연
- 차세대 인재 양성 및 유지 활동
- 타지역 협회와의 교류

간담회

한중 과학기술, 차세대 인재 배양 등 다양한 현안 논의

협회 홈페이지 운영 (http://kseach.org/)

- 협회 활동 및 협회회원 동정 소개
- 정기적으로 중요 한중 과학기술 소식 정리

유관기관과의 협력

한중간의 과학기술 분야 교류 증진



회원가입

협회 홈페이지 (https://kseach.org/) 오른쪽 상단 "재중과협 회원가입"

KSEACH 재중한인과학기술자협회
Korean Scientists and Engineers Association in China