

Impact, Innovation, and Connectivity  
for transforming Tomorrow Together

# EKC 2024

## CONFERENCE PROGRAMME

EUROPE-KOREA  
CONFERENCE  
ON SCIENCE  
AND TECHNOLOGY

29.07.2024 – 02.08.2024  
THE OCULUS  
UNIVERSITY OF WARWICK  
COVENTRY, UK



# TABLE OF CONTENTS

<b>Welcome Message &amp; Congratulation Remarks</b>	2
<b>Conference Information</b>	4
Organiser & Committee	5
Program Overview	8
Floor Plans	10
Social Programme	12
<b>Plenary &amp; Keynote Speaker</b>	13
<b>Science &amp; Technology Sessions</b>	19
[BE] Built Environment and Engineering Design	20
[BS] Basic Science	23
[CM] Chemical Engineering and Material Science	27
[EE] Environment and Energy	31
[EI] Electrical, Electronics & Information Engineering	35
[LH] Life Science and Health	38
[NF] Nuclear and Fusion Technology	43
[MA] Mechanical and Aerospace Technology	45
[MO] Marine and Ocean Engineering	49
[WS] Women in Stemm	52
<b>Poster Session</b>	55
<b>Industry Forum</b>	61
<b>Special Topics</b>	63
<b>Sponsors</b>	73

Dear distinguished guests and participants,

It is our great pleasure to extend a warm welcome to all of you to the Europe-Korea Conference on Science and Technology 2024, which will be held at the University of Warwick in Coventry/Birmingham, UK. The EKC2024 is hosted by the Korean Scientists and Engineers Association in the UK (KSEAUk) together with the Korean Federation of Science and Technology Societies (KOFST) and eight other affiliates in Europe which are in Germany (VeKNI), France (ASCoF), Austria (KOSEAA), Finland (KOSES), Scandinavia (KSSEA), the Netherlands (KOSEANL), Switzerland (KSEAS), and Belgium (KOSEAbel).

As we gather for this important event, we are excited to engage in a collaborative and productive exchange of ideas and insights that will help to shape the future of science and technology in Europe and Korea. This conference provides a unique opportunity for scholars, researchers, industry leaders, and policymakers to come together and explore innovative solutions to challenges that our world faces today.

The theme for the EKC2024 is

***“Impact, Innovation, and Connectivity for Transforming Tomorrow Together”.***

The theme emphasises the need for impactful actions, innovative solutions, and enhanced connectivity to collaboratively work towards a positive and transformative future. It encourages individuals and communities to join forces in shaping a better tomorrow through a collective effort and a shared vision.

We would like to express our gratitude to all the participants, organisers, sponsors, and volunteers who have made this conference possible. Your dedication and commitment have set the stage for a memorable and productive event.

We look forward to welcoming you at the EKC2024.



**Dr. Jin, Seongho**

Chair of the EKC2024  
President of the Korean Scientists  
and Engineers Association in the UK  
(KSEAUk)



**Dr. Lee, Taisik**

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





**Kim, Bok Chul**

Chairperson  
National Research Council of  
Science and Technology (NST)

Dear distinguished guests and participants,

I would like to express my gratitude to the Korean Scientists and Engineers Association in the UK (KSEAUUK), the Korean Federation of Science and Technology Societies (KOFST) and eight other Korean Scientists and Engineers Associations in Europe for hosting the 16th Europe-Korea Conference on Science and Technology (EKC).

Since its first launch in Heidelberg, Germany, in 2008, EKC has grown into a premier scientific and social gathering for European and Korean scientists and engineers. This conference serves as more than just a forum for the exchange of ideas and innovations; it embodies the essence of collaboration and partnership between Korean institutes and their potential counterparts in the UK and Europe. Through the tireless dedication of fellow scientists and engineers across the region, we are forging pathways to impactful collaborations and groundbreaking discoveries.

The ongoing global transition towards fostering a secure and protected environment underscores the critical role of collaborative partnerships spanning various sectors and regions. Thus, the theme of this year's conference resonates deeply, encapsulating the call for global solidarity driven by innovative cross-sectoral collaboration. It also reflects our shared commitment to harnessing the power of science and technology to shape a bright future for all.

In embarking on a comprehensive initiative to foster advanced industries, the Korean government has identified 12 national strategic technologies as pivotal drivers of Korea's future growth, propelling the nation toward a sustainable society. At the heart of this endeavour lies in enhancing international collaboration, a key policy measure aimed at bolstering economic security not only domestically but also on the global stage. Moreover, the government is emphasizing investment in international cooperation "to achieve first-in-class innovation capabilities and foster top tier talent through global partnerships" in order to build stronger alliances with countries that share similar values, creating a solid foundation for mutual progress.

As core innovation actors in Korea, government-funded research institutes (GRIs) are not only instrumental in attaining national strategic technologies but also dedicated to addressing global challenges. Through their pioneering research and collaborations with global counterparts, GRIs are exemplifying their pivotal role in shaping a sustainable and prosperous future.

I believe this conference will be a venue for meaningful discussions, exchange insights; moreover, an opportunity to cultivate new avenues for collaboration. May it indeed act as a catalyst for impactful partnerships, paving the way for transformative advancements that will shape the future of science and technology.

Thank you.

Dr. Kim, Bok Chul  
Chairperson of National Research Council of Science and Technology (NST)

**Date**

Tuesday, 30 July - Friday, 2 August 2024

**Venue**

The Oculus, University of Warwick  
University Rd, Coventry CV4

**Internet Access**

Free Wi-Fi is available throughout the campus. Connect your device to the 'Warwick Guest' wireless network. Upon your first attempt to access online content with the web browser, you will be redirected to the Warwick Guest Wireless web page. Please continue to create yourself a Warwick Guest account. Please provide your details, including a valid mobile phone number, to which your generated guest login will be sent. Additionally, institutional users can access to 'eduroam'.

**Registration**

The registration desk will be located on the ground floor of the Oculus. Registration is scheduled on Monday 29th July from 16.00-18.00. The registration desks opens at 8 am on 30th July - 1st August.

**Name Tag**

Participants are asked to wear their name Tag at all times during the conference, including during tea and coffee breaks, and social events. If you lose your tag, please visit the registration desk. You will be required to show photo ID to have a new tag printed.

**Sponsors**

We would like to express our sincerest gratitude to our sponsors for their generous support. The exhibition will be held on the ground floor. We kindly request participants to take the time to visit the booths of our sponsors.

**Poster Presentations**

The accepted posters will be presented in OC0.02 at 16.20-18.30 on 30th July. We invite all participants to attend the poster session.

**Group Photograph**

A group photograph will be taken on Wednesday 31st July at 13.50 in front of the Oculus.

**Site Visit**

The Site Visit programme offers a tour of leading companies in the UK on 29 July, the day before EKC 2024, and is available to EKC 2024 registrants. Interested participants should apply during registration, but spots are limited and will close once filled. The visit will last approximately half a day, departing from Warwick University by bus. Around 60 participants are expected, with the final number dependent on interest.

**Family Day Tour**

For those who are participating in this EKC 2024 with their family, two tour programmes will be offered during the conference:

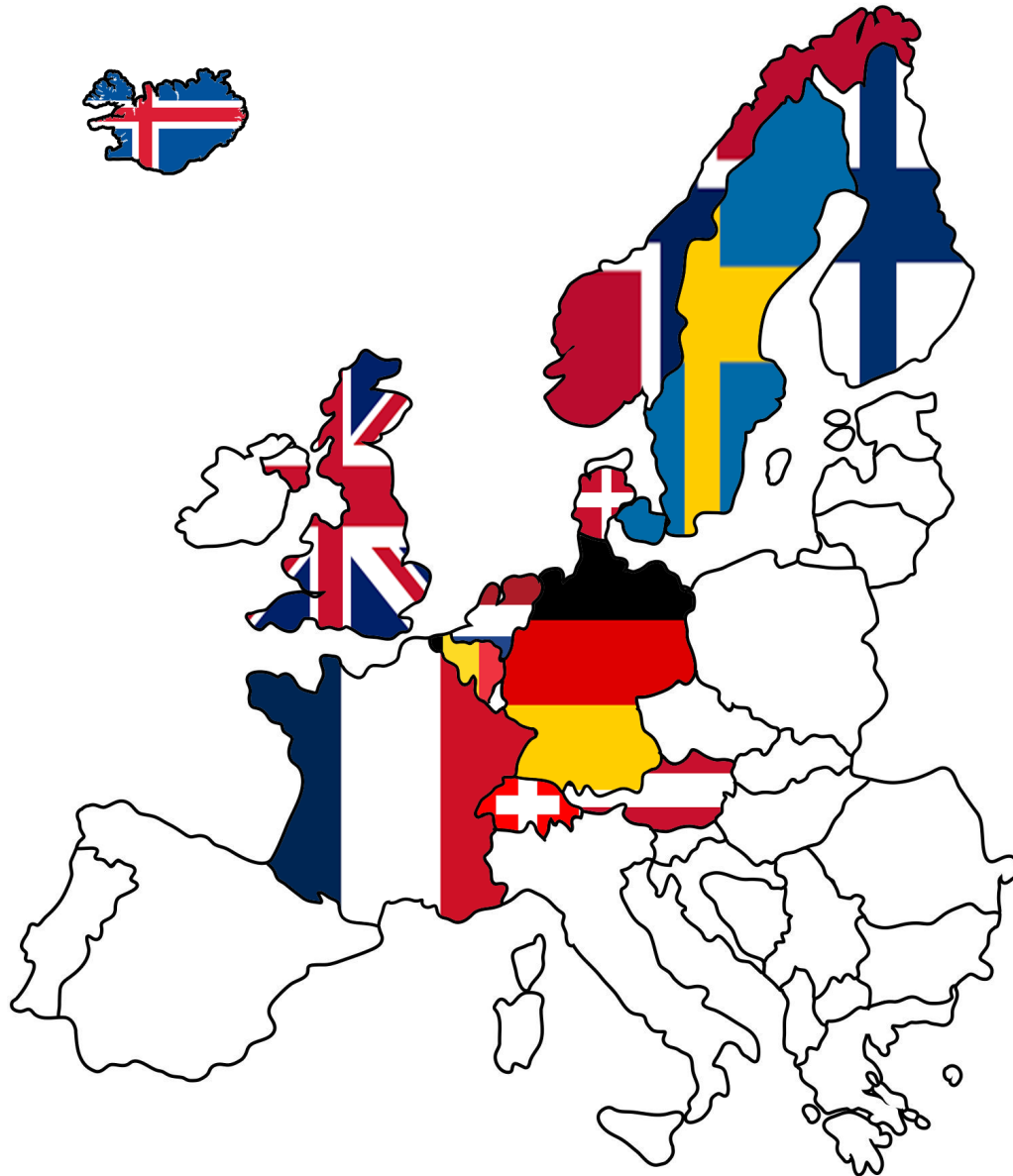
31st July (Wednesday):  
Stratford-upon-Avon & Cotswold

1st August (Thursday):  
Bicester Village & Oxford

Please see page 12 of the programme for details.

**Science School**

Science School Programme aims to promote scientific and technological knowledge among Korean youth in Europe and to foster a spirit of innovation. It is available exclusively for the children of EKC 2024 participants, with activities designed for Group A (ages 6-12) and Group B (ages 12 and above). The program runs from 31 July to 1 August, following an orientation on 30 July.



## CONFERENCE CHAIR

Jin, Seongho (University of Lincoln / KSEAUK President)

## CONFERENCE CHAIR

Lee, Taisik (KOFST President)  
Bae, Dongwoon (VeKNI President)  
Lee, Jong Wook (ASCoF President)  
Han, Man Wook (KOSEAA President)  
Son, Myeong-Jo (KOSES President)  
Hwang, Joong Sun (KOSEANL President)  
Choe, Young-Han (KSEAS President)  
Kwon, Min Chul (KOSEABE President)  
Kim, Taeseong (KSSEA President)

## ADVISORY BOARD

Park, Migeun (University of Strathclyde / KSEAUK)  
Yoo, Martin S. D. (CRUSE Offshore GmbH / VeKNI)  
Park, Wonsun (Pusan National University / VeKNI)  
Kim, Junbeum (University of Technology of Troyes / ASCoF)  
Park, Jongmun (ams-OSRAM / KOSEAA)  
Kim, Keunjae (SSPA / KSSEA)  
Ryu, Changseon (KIST Europe / VeKNI)  
Jeung, Gwanghi (Aix-Marseille University / ASCoF)

## PROGRAMME CHAIR

Kim, Youngchan (University of Surrey / KSEAUK)

## INDUSTRY FORUM CHAIRS

Park, Migeun (University of Strathclyde / KSEAUK)  
Lim, Jungmin (KSEAUK)

## INDUSTRY FORUM COMMITTEE

Lee, Jaemin (University of Leeds / KSEAUK)  
Kong, Kyungil (University of Bristol / KSEAUK)  
Yoo, Kwangkyu (Deep.Meta / KSEAUK)

## AUDITOR

Lee, Yongwon (Lloyd's Register / KSEAUK)

## FINANCE DIRECTOR

Choi, Youngseok (Kingston University London / KSEAUK)

## LOCAL COMMITTEE CHAIR

Park, Young Saeng (University of Warwick / KSEAUK)

## PROGRAMME DIVISION CHAIRS

### BE, Built Environment and Engineering Design

An, Semina (TU Bergakademie Freiberg / VeKNI)  
Kim, Eui Young (TU Delft / KOSEANL)

### BS, Basic Science

Oh, Yoojin (Johannes Kepler University Linz / KOSEAA)  
Kim, Minjae (University of Warwick / KSEAUK)

### CM, Chemical Engineering and Material Science

Lee, Lauren Ye Seol (University College London / KSEAUK)  
Lee, Juhan (Heraeus battery technology / VeKNI)

### EE, Environment and Energy

Ahn, Hyungwoong (University of Edinburgh / KSEAUK)  
Lee, Eun Young (University of Vienna / KOSEAA)

### EI, Electrical, Electronics, & Information Engineering

Hah, Dooyoung (Abdullah Gul University / ASCoF)  
Choi, Changkyu (UiT The Arctic University of Norway / KSSEA)

### LH, Life Science and Health

Lee, Seung Seo (University of Southampton / KSEAUK)  
Lee, Kyung Min (University of Helsinki / KOSSES)

### NF, Nuclear and Fusion Technology

Kim, Byoung Yoon (ITER Organization / ASCoF)  
Kim, Hyun-Tae (United Kingdom Atomic Energy Authority, KSEAUK)

### MA, Mechanical and Aerospace Technology

Park, Hyuk (Universitat Politècnica de Catalunya / ASCoF)  
Han, Woo-Suck (Mines Saint-Etienne / ASCoF)

### MO, Marine and Ocean Engineering

Jeong, Byongug (University of Strathclyde / KSEAUK)  
Yum, Kevin Koosup (JD Hyundai Europe R&D Center / KSSEA)

### WS, Women in STEMM

Ro, Seonhi (Ford Motor Company / VeKNI)

### Other Special Topics

Kim, Youngchan (University of Surrey / KSEAUK)

## LOCAL COMMITTEE

Kim, Minjae (University of Warwick / KSEAUK)  
Park, Hyungmin (University of Warwick / KSEAUK)  
Shin, Donghan (University of Oxford / KSEAUK)  
Park, Junho (Coventry University / KSEAUK)  
Yoo, Seong Ki (Coventry University / KSEAUK)  
Lee, Jaemin (University of Leeds / KSEAUK)  
Ahn, Sungil (ABS Europe Ltd. / KSEAUK)  
Kim, Hansung (University of Southampton / KSEAUK)  
Shin, Sang-Hee (National Physical Laboratory / KSEAUK)  
Hong, Eunyoung (Imperial College London, KSEAUK)  
Son, Wonil (Squire and Partners / KSEAUK)  
Kim, Boeun (University of Birmingham / KSEAUK)

30th July (Tuesday)

09:00 - 10:40	ST1 OC1.01	ST4:NRF OC0.03			LH0 OC1.04	WS1 OC0.04		IF1 OC0.01
10:40 - 11:00				Break				
11:00 - 12:40	ST2 OC1.01	BS1 OC0.03	ST7 OC1.09	EI1 OC1.02	LH1 OC1.04	WS2 OC0.04	MA1 OC1.06	IF2: KITECH OC0.01
12:40 - 14:00				Lunch				
14:00 - 16:00	Opening Ceremony & Plenary Session 1 (OC1.05)							Science School Reg.
16:00 - 16:20				Break				
16:20 - 18:00	ST3 OC1.01	ST5[C]: K-TAG (16:20-18:20) OC1.04	ST6: POSTECH OC0.04	Poster Session  OC0.02				IF3 OC0.01
18:00-18:30								
18:30 - 19:00				Break			ST8: Pohang OC1.06	
19:00 - 21:30	Opening Banquet @ Rootes Building							

31st July (Wednesday)

09:00 - 10:40	BE1	BS2	CM1	EE1	EI2	LH2	NF1	MA2	MO1	ST9[C]: YGF/YPF	Science School (09:00 - 12:00, 14:00 - 17:00)
	OC1.02	OC1.03	OC1.08	OC1.09	OC1.01	OC1.04	OC0.04	OC1.07	OC1.06	OC0.01	
10:40 - 11:00	Break										
11:00 - 12:40	BE2	BS3	CM2	EE2	EI3	LH3	NF2	MA3	MO2	ST10[C]: Leaders Forum	
	OC1.02	OC1.03	OC1.08	OC1.09	OC1.01	OC1.04	OC0.04	OC1.07	OC1.06	OC0.01	
12:40 - 14:00	Lunch									MoU: KSEAUK - MSS, FoA	
14:00 - 16:00	Plenary Session 2 (OC1.05)										
16:00 - 16:20	Break										
16:20 - 18:00	ST11: STEPI	BS4	CM3	EE3	EI4	LH4	NF3	MA4	ST12: Pohang	ST13: KIAT- KITECH-K-FAST	ST18: LG Energy Solution
	OC1.02	OC1.03	OC1.08	OC1.09	OC1.01	OC1.04	OC0.04	OC1.07	OC1.06	OC0.01	OC0.03

## 1st August (Thursday)

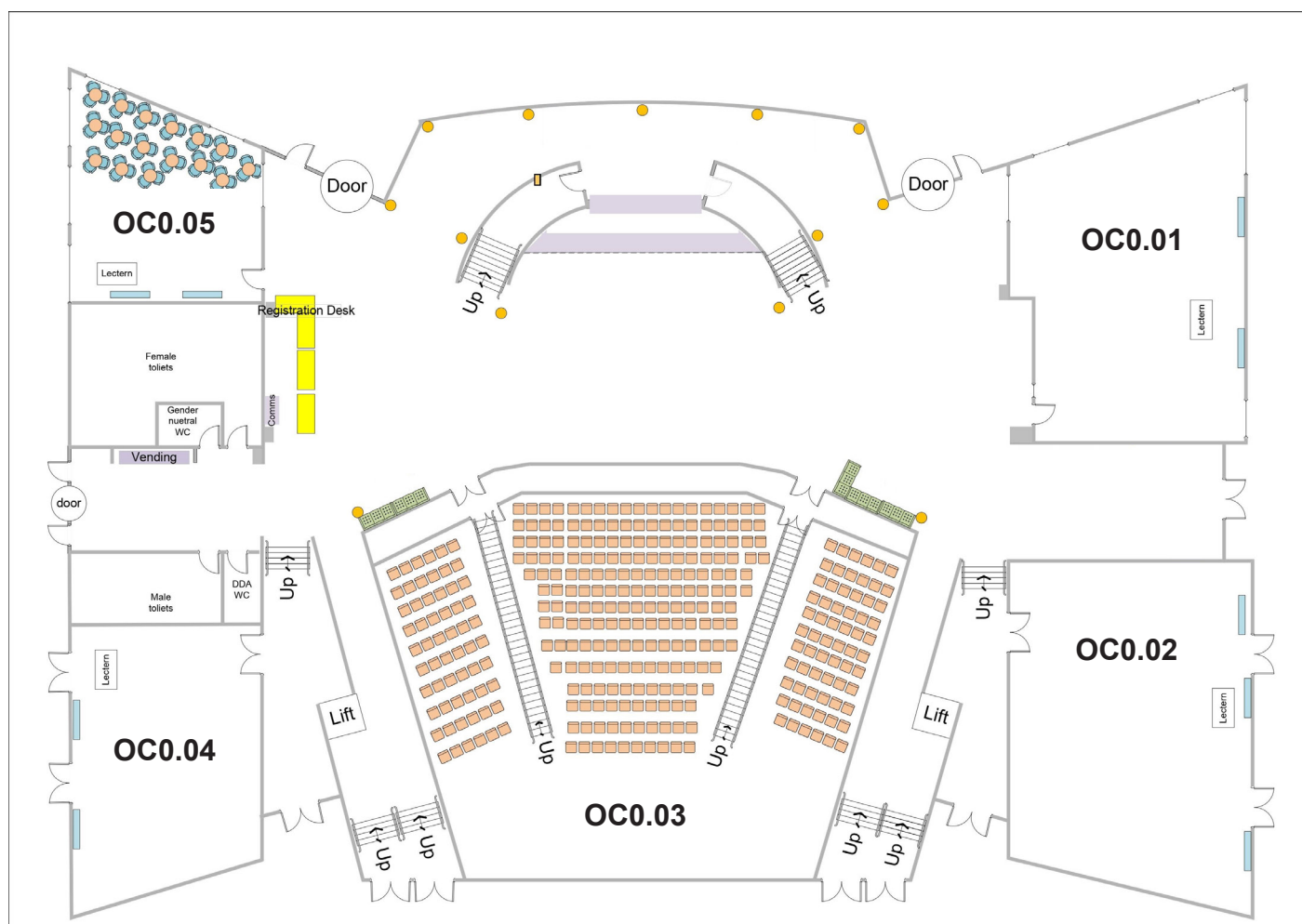
09:00 - 10:40	BE3 OC1.02	BS5 OC1.03	CM4 OC1.08	EE4 OC1.09	EI5 OC1.01	LH5 (OC1.04)	ST14: KIST- Europe OC0.04	MA5 OC1.07	MO3 OC1.06	ST15: KEIT OC0.01	Science School (09:00 - 12:00, 14:00 - 17:00)
10:40 - 11:00											
11:00 - 12:40	BE4 OC1.02	BS6 OC1.03	CM5 OC1.08	EE5 OC1.09	EI6 OC1.01	LH6 OC1.04		MA6 OC0.04	MO4 OC1.06	ST16 OC0.01	
12:40 - 14:00	KSEAUK 50th annv. (12:50- 13:20) OC0.03	Lunch									
14:00 - 15:40	BE5 OC1.02	BS7 OC1.03	CM6 OC1.08	EE6 OC1.09	EI7 OC1.01	LH7 OC1.04	ST17 OC0.04	MA7 OC1.07	MO5 OC1.06	IF4: WMG OC0.01	
15:40 - 16:00	Break										
16:00 - 17:40	BE6 OC1.02		CM7 OC1.08	EE7 OC1.09		LH8 OC1.04		MA8 OC1.07	MO6 OC1.06	IF5: WMG OC0.01	
17:40 - 18:30	Break									MoU: KSEAUK - Korea Uni, FoA	
18:30 - 21:00	Closing Banquet @ Rootes Building										

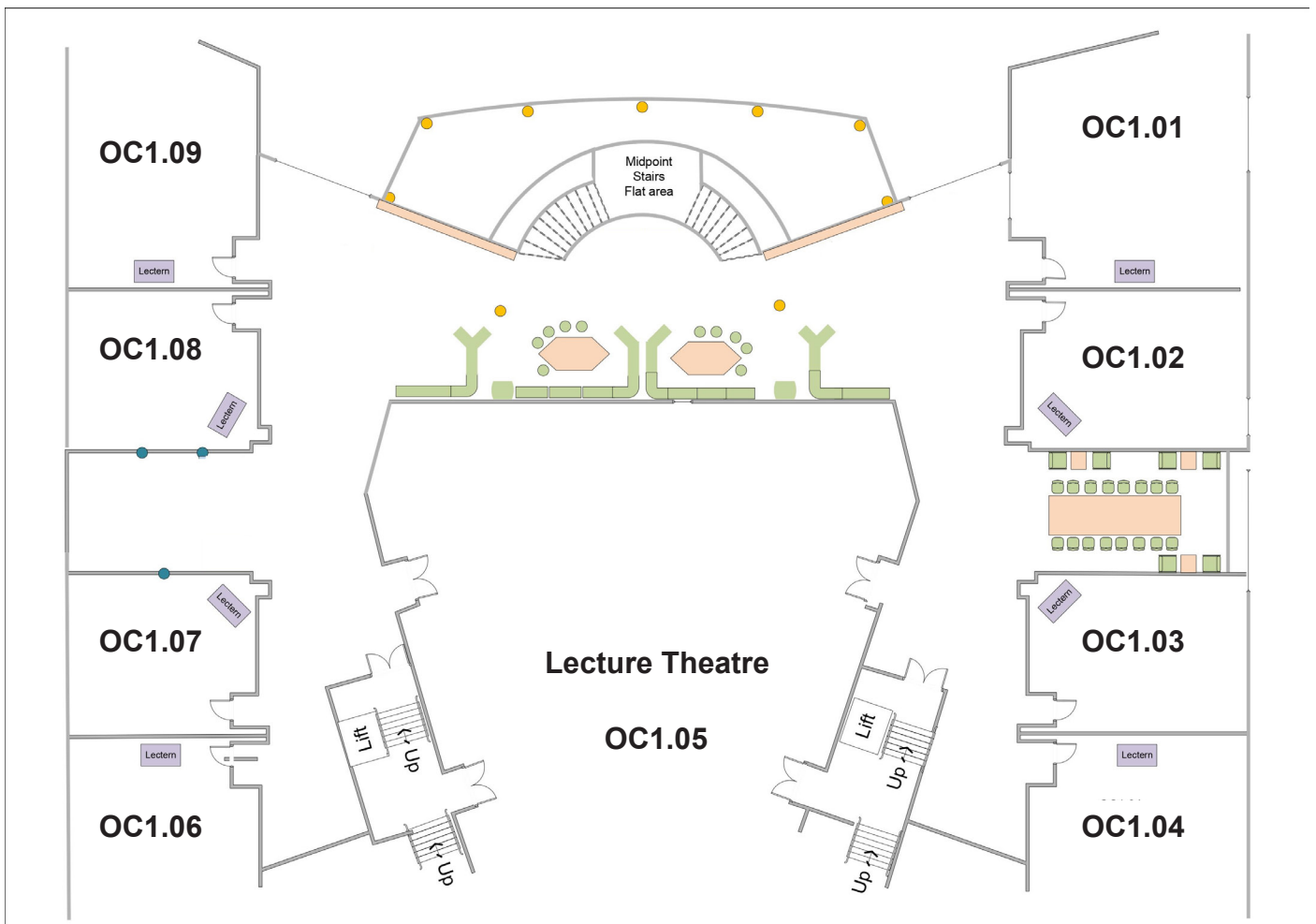
BE	Built Environment and Engineering Design
BS	Basic Science
CM	Chemical Engineering and Material Science
EE	Environment and Energy
EI	Electrical, Electronics, & Information Engineering
LH	Life Science and Health
NF	Nuclear and Fusion Technology
MA	Mechanical and Aerospace Technology
MO	Marine and Ocean Engineering
WS	Women in STEMM
ST	Special Topic
IF	Industry Forum



# Floor Plans

## Ground Floor Plan







## 31st July (Wednesday)

### Tour A: Stratford-upon-Avon & Cotswold

Stratford-upon-Avon is the town where William Shakespeare was born and is buried.

The Cotswolds are famous for their typically English landscape of lovely green rolling hills, stone walls, woodland and charming little towns and villages.

DATE	: 31 July
TIME	: 09:30 – 18:00 (It may vary slightly depending on traffic condition.)
ROUTE	: Stratford-upon-Avon and Cotswold
FEE	: 60 GBP (per person)
INCLUDES	: Transportation Guide Lunch (Local cuisine) Admission for Shakespeare's Birthplace



## 1st August (Thursday)

### Tour B: Bicester Village & Oxford

Bicester Village is home to more than 150 boutiques of world renowned fashion and lifestyle brands.

Oxford is among England's most famous cities, with its ancient university and beautiful buildings.

DATE	: 1 August
TIME	: 09:30 – 18:00 (It may vary slightly depending on traffic condition.)
ROUTE	: Oxford and Bicester Village
FEE	: 60 GBP (per person)
INCLUDES	: Transportation Guide Lunch (Local cuisine) Admission for Oxford University

# **PLENARY & KEYNOTE SPEAKER**

## Indro Mukerjee

CEO of Innovate UK

### Biography

Indro Mukerjee is CEO of Innovate UK, the UK's innovation agency.

He is a highly experienced technology CEO and business leader with a track record of leading innovation and technology commercialisation in businesses of all sizes across the world, from publicly listed and multinational corporations to new venture and private equity backed technology companies.

Indro has extensive experience of leading fast growth; start-up; spinouts; restructuring; turnaround and successful M&A. Much of his time was spent in Asia and the US.

With a strong personal interest in the development of skills for industry, he cofounded the UK Electronics Skills Foundation and served on the SEMTA (now Enginuity) board for nine years, where he was also chair of the committee managing their investment fund. He is also a passionate advocate for diversity, equality, and inclusion.

Indro has a degree in engineering science from University of Oxford, is a graduate of the Wharton Advanced Management Program and speaks several European languages.

Indro was elected as an Honorary Fellow of The Royal Academy of Engineering in September 2022.

### *A Forward-Looking Innovation Ecosystem*



## ByungJoo Min

President of the Korea Institute for Advancement of Technology (KIAT)

### Biography

Dr. Byungjoo Min, 5th President of the Korea Institute for Advancement of Technology (KIAT), is currently playing a pivotal role in promoting innovation in industrial technologies in Korea. Prior to her appointment, she served as a visiting professor at UNIST from 2016 to 2022 and was a member of the 19th Korean National Assembly from 2012 to 2016. Dr. Min also worked at the Korea Atomic Energy Research Institute (KAERI) as a Project Manager in the Research and Development Project for the development of the Advanced CANDU reactor. Subsequently, she held positions as a Chair of the Korean Women in Science and Technology Association, and Chief of the Nuclear Training & Education Center.

Regarding her educational background, Dr. Min graduated from Ewha Woman's University in Seoul, Korea, where she earned Bachelor's and Master's degrees in Physics. She furthered her studies at Kyushu University in Japan, obtaining a Ph.D. in Physics with a major in Nuclear Physics.

### *Korea's Growth & Industrial Technology Innovation Policy*

Industrial technology innovation policy is an absolutely essential tool for reducing economic uncertainty, accelerating the restructuring of a country's industrial structure, enhancing the global competitiveness of companies, and driving long-term growth for the country. Since the 20th century, Korea has been on a mission to craft bespoke policies that keep pace with the ever-changing tides of the global environment. In this article, we're going to dive into the major policies of the Korean government since its establishment and explore the country's diverse industrial development policies in anticipation of the AI era. We'll be looking at the incredible journey of Korea, which has grown from one of the world's poorest countries to become a major player in global value chains. This is a story of hope and possibility, and it's one we can all learn from. Join us as we explore the way forward for industrial policy.





## Signe Ratso

European Commission Deputy Directorate-General  
“Research and Innovation”

### Biography

Signe Ratso is Deputy Director-General and a member of the Management Board of the Directorate-General for Research and Innovation of the European Commission.

She is responsible for Innovation, Prosperity and International Cooperation Directorates and she is Chief negotiator for association policy on Horizon Europe. She has taken up the direct lead for International cooperation with Europe, Americas and thematic coherence as well as Asia, Africa, Middle East & External Relations.

She oversees some of the priority areas of the Commission in DG R&I such as the Human Frontier Science Program.

Before joining DG R&I in 2018 she worked in different senior management positions in DG TRADE since 2006.

Signe Ratso has always been involved in international affairs. Before joining the Commission she worked as Deputy Secretary General (from 1994 to 2005) at the Ministry of Economic Affairs and Communications of the Republic of Estonia. She has two University degrees from Tartu University in Estonia.

### ***New Research Opportunities under EU Horizon Europe Association***



## Taisik Lee

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

### Biography

Dr. Tai Sik Lee is a renowned scientist and engineer in South Korea and the President of the Korean Federation of Science and Technology Societies (KOFST).

He earned his bachelor's degree in civil engineering from Seoul National University and his master's and doctoral degrees in construction management from the University of Wisconsin-Madison. Following these achievements, he served as a professor at Hanyang University, the president of the Korean Society of Civil Engineers and as the president of the Korea Institute of Civil Engineering and Building Technology.

In addition to his academic work, Dr. Lee has been actively involved in various science and technology-related organizations. As the President of KOFST, he advocates for the rights of scientists and engineers and works towards the advancement of science and technology policies. Dr. Lee is dedicated to strengthening the connection between the scientific communities of South Korea and the world and to fostering future scientific talents.



### ***Pioneering the Final Frontier***

## Myungshik Kim

Chair in Theoretical Quantum Information Sciences,  
Department of Physics, Imperial College London

### Biography

Professor Myungshik Kim's research interests lie in understanding quantum mechanics and stretching its applications. For his research, he has been awarded the Humboldt fellowship, the Wolfson merit award, the Friedrich von Siemens award and the Hoam science award and elected to the membership of the Royal Irish Academy.



### *Quantum Computing - Its Principle and Reality*

Quantum mechanics is one of the finest theories to explain the laws of nature. It has also provided tools to understand the energy structures of semiconductors which has enabled to develop all the modern information processing tools including computers and mobile phones. The development of lasers is also rooted from quantum mechanics. Our understanding of quantum mechanics has evolved since its birth 120 years ago. Now, we are excited about the potential of the next revolutionary changes quantum mechanics will bring through the development of quantum computers, quantum sensors and quantum communications.

## Sangmok Lee

President of the Korea Institute of Industrial Technology (KITECH)

### Biography

President Sangmok Lee has long been engaged in research within the realm of production technology, often referred as 'root technology' in Korea. Recently, his focus has shifted towards the innovation of traditional manufacturing using digital technologies based on enlarged business models. Currently, he serves as the President of the Korea Foundry Society and has previously held positions as the Representative Professor at UST (University of Science and Technology) KITECH and as the Director of National root technology center.



### *From Manufacturing to Valufacturing - A Return of the Neo Craftsmanship*

Nowadays, we are facing a significant industrial paradigm shift, including digital and green transformations, caused by abrupt climate, demographic, and international order changes, but moreover customers' burst appetite for individualization. These shifts have been caused by doubts for effectiveness of mass production on economy, mainly based on standardization of products for productivity driven by traditional manufacturing philosophy. The current scenario calls for innovation that restructures the overall smile curve of the manufacturing value chain forward upper direction, naturally bringing out autonomous manufacturing for mass customization and servitization. It is suggested that a comprehensive revolution, transitioning from manufacturing to 'valufacturing', is deemed necessary. We welcome a return of the Neo craftsmanship with great energy power and marvelous production system after 260 years since the industrial revolution.



**Built Environment and Engineering Design (BEED)**



**DR. SIMEONE, Luca**

Aalborg University

Thinking as a Design Material in City-Making: Involving City Stakeholders in Design Journeys that Deepen their way of Envisioning the Future

**Chemical Engineering and Material Science**



**PROF. PASTA, Mauro**

University of Oxford

Lithium-Alloy Anodes in Solid-State Batteries

**Environment and Energy**



**PROF. WATERS, Colin**

University of Leicester

The Anthropocene is Real Despite News to the Contrary!

**Nuclear and Fusion Technology**



**DR. OH, Yeongkook**

Korea Institute of Fusion Energy

Status of Korea's Fusion Research Activities and Strategies to Accelerate Fusion Energy Commercialization

**Basic Science**



**DR. LEE, Yeon Joo**

Institute for Basic Science

Unveiling Venus, from Afar and from Up-Close

**Chemical Engineering and Material Science**



**PROF. NA, Jonggeol**

Ewha Womans University

Autonomous Design of Products and Processes: Generative Chemical Transformer to Reinforcement Learning-Guided Combinatorial Chemistry

**Electrical, Electronics, & Information Engineering**



**PROF. JENSSEN, Robert**

Uit The Arctic University of Norway

Towards eXplainable AI (XAI) with Deep Learning

**Nuclear and Fusion Technology**



**PROF. YOU, Jeong-ha**

Max Planck Institute for Plasma Physics

Integrated Interdisciplinary Engineering Efforts towards Realisation of a Fusion Power Plant

**Life Science and Health**



**PROF. CHOI, Insung**

Korea Advanced Institute of Science & Technology (KAIST)

Single-Cell Nanoencapsulation: Past, Present, and Future

**Marine and Ocean Engineering**



**PROF. PAIK, Jeom-kee**

University College London

Digital Healthcare Engineering for Enhancing Safety and Sustainability in Maritime Operations

**Special Topics**



**PROF. CHO, Sook-kyoung**

Korea Institute of Energy Technology (KENTECH)

The Light and Shadow of Science Communication in Korea - Based on 20 years of Practice-

**Mechanical and Aerospace Technology**



**PROF. ALTMAYER, Sebastian Andreas**

Universitat Politècnica de Catalunya (UPC)

Flow Control via External Applied Magnetic Fields

**Women in STEMM**



**PROF. KWON, Oh Nam**

Seoul National University

The 20-Year Journey of KOFWST towards Gender Diversity in Korea's Science and Technology

# **SCIENCE & TECHNOLOGY DIVISIONS**

[BE] - BUILT ENVIRONMENT AND ENGINEERING DESIGN

[BE] - BUILT ENVIRONMENT AND ENGINEERING DESIGN

DR. KIM, Eui Young  
MS. AN, Semina

TU Delft  
TU Bergakademie Freiberg

As there is greater pressure for sustainable development, the requirements for the environment are becoming more demanding. There is broad agreement that densely populated urban areas should be more sustainable than rural areas. However, while over half of the planet's population lives in cities, they account for more than 75% of the consumption of non-renewable resources, causing climate change. The Built Environment and Engineering Design (BEED) Division will take a new perspective on the sustainable built environment and strategic and resilient approaches to responding to unprecedented events such as climate change. Also, the sustainability of the environment needs to be discussed in line with traditional architectural design, history, theory, and methodology. Therefore, the sessions aim to bring together architects, historians, designers, built environment professionals, climate and energy researchers, policy experts, and government officials to discuss recent research and works. The sessions of the BEED will allow delegates to increase their knowledge and skills related to building design, history, sustainable development, resilience, stakeholder engagement, and the performance of buildings and materials. A total of 6 oral sessions, including a keynote speech (Dr. Luca Simeone) & a roundtable discussion in BE2, is organized at EKC 2024.

July 31st (Wednesday)

- 9:00-10:40 [BE1] Urban & Architectural History Research (Chair: Kwangjin Lee)
- 11:00-12:30 [BE2] (Keynote & Round Table) Thinking as a design material in city-making: Involving city stakeholders in design journeys that deepen their way of envisioning the future (Keynote: Luca Simeone; Chairs: Euiyoung Kim & Semina An)

Aug. 1st (Thursday)

- 9:00-10:40 [BE3] Changing with the Times - Revitalizing Brownfields in Cities (Chair: Nammyoung Hong)
- 11:00-12:40 [BE4] Sustainable Built Environment (Chair: Moon Keun Kim)
- 14:00-15:40 [BE5] Acoustics and its Impacts on Built Environments (Chair: Pyoung-jik Lee)
- 16:00-17:40 [BE6] Co-creating Sustainable and Resilient Future for the Built Environment (Chair: Nicola Colaninno)

**Wednesday, 31st July, 2024**

[BE1] Urban & Architectural History Research

09:00 - 10:40 @ OC1.02 Chair : MR. LEE, Kwangjin, aKLEE & YAHN, Max Dudler

Time	Title	Presenter
09:00	Heritage Conservation in Practice: Embassy of Switzerland in Berlin	MS. AHN, Yumi (KLEE & YAHN)
09:30	Ruins as urban space	MR. LEE, Kwangjin (KLEE & YAHN / Max Dudler GmbH)
10:00	Public architecture and aesthetic experience: Focusing on Berlin and Seoul city halls	MR. KIM, Ki Jun (Atelier Ki Jun Kim)

[BE2] Keynote & Round Table

11:00-12:40 @ OC1.02 Chair : SIMEONE, Luca, Aalborg University

Time	Title	Presenter
11:00	Thinking as a design material in city-making: Involving city stakeholders in design journeys that deepen their way of envisioning the future	DR. SIMEONE, Luca (Aalborg University, Denmark)

**Thursday, 1st August, 2024**
**[BE3] Changing with the times- Revitalizing Brownfields in Cities**
**09:00 - 10:40 @ OC1.02 Chair : MS. HONG, Nammyoung, TU Berlin**

Time	Title	Presenter
09:00	Legacy of the Skies: Urban Regeneration of Former Airports in Berlin	MS. HONG, Nammyoung (TU Berlin)
09:30	Evolution of transport policy and its key actors for sustainable urban mobility planning - the case of Seoul and South Korea	MS. YUN, Daun (Tu Wien)
10:00	Berlin (European city)'s smart city strategy: In what direction is Berlin's smart city strategy developing, and what will the future society (smart city) look like?	MS. JANG, Eunyoung (Humboldt-universität Zu Berlin)

**[BE4] Sustainable Built Environment**
**11:00-12:40 @ OC1.02 Chair : MR. KIM, Moon Keun, Oslo Metropolitan University**

Time	Title	Presenter
11:00	Impact of Physical Parameters on Personal CO2, PM2.5, and PM10 Exposures in a Simulated Office Environment	DR. YUN, Seoyeon (Siemens Schweiz Ag)
11:00	Developing Innovative Data Management in Digital Construction: Case Study	DR. PAIK, Seong Mok (University College Dublin)
11:20	Buried Infrastructure Monitoring with Robotics and New Sensing Technology	DR. CHA, Wonjun (University of Birmingham)
11:40	On the Ground: Incorporating subjective occupant feedback into data-driven urban planning for climate-resilient cities	DR. MOSTEIRO ROMERO, Martín (Tu Delft)
12:00	Assessing the Influence of Environmental Conditions on Residential Heating Energy Use	PROF. KIM, Moon Keun (Oslo Metropolitan University)

### Thursday, 1st August, 2024

#### [BE5] Acoustics and its impacts on Built Environment

<b>14:00-15:40</b>	<b>@ OC1.02</b>	<b>Chair : DR. LEE, Pyoung-jik, The University of Liverpool</b>
Time	Title	Presenter
14:00	Improving acoustics and noise conditions in class rooms and hospitals	PROF. JEONG, Cheol-ho (Technical University of Denmark)
14:20	Ecologically valid recording and reproduction for urban soundscape evaluations in a lab setting	PROF. LEE, Hyunkook (University of Huddersfield)
14:40	Floor impact sound reduction performance of acoustic metamaterial ceiling materials	DR. JEONG, Jeong-ho (Fire Insurers Laboratories of Korea)
15:00	Stakeholder engagement tool - SoundLab	MR. YOUN, Gwan Young (Arup)
15:20	Analysis of Evacuee Behavior Characteristics and Evacuation Time Through Evacuation Demonstration Experiments	DR. KWARK, Jihyun (Fire Insurers Laboratories of Korea)

#### [BE6] Co-creating Sustainable and Resilient Future for the Built Environment

<b>16:00-17:40</b>	<b>@ OC1.02</b>	<b>Chair : DR. COLANINNO, DASTU at Politecnico di Milano</b>
Time	Title	Presenter
16:00	Citizenas: A Design Tool for Multi-dimensional Perspectives in City Planning Mobility Policy	MS. JOO, Jeongha (Delft University Of Technology)
16:25	Embracing Circular Economy Principles in Architecture and Planning: Policy and Implementation	MR. SON, Wonil (Squire And Partners)
16:50	Walking heat-resilient cities: Understanding heat risk for pedestrians and walk-accessibility	DR. COLANINNO, Nicola (Politecnico Di Milano)

## [BS] - BASIC SCIENCE

DR. OH, Yoojin  
DR. KIM, Minjae

Johannes Kepler University Linz  
University of Warwick

Basic sciences encompass a broad array of scientific disciplines, including mathematics, physics, astronomy, chemistry, biology, and earth science, each delving into the intricacies of natural phenomena. These disciplines serve as the bedrock of scientific inquiry, offering insights into the fundamental processes governing the universe. Through the rigorous study of these subjects, we gain a deeper comprehension of the mechanisms through which matter in nature undergoes transformation, unlocking the mysteries of the cosmos and the intricacies of life itself.

As we convene at the EKC2024 conference, our focus will not only be on elucidating the fundamental understanding of natural phenomena but also on exploring the myriad applications that stem from this knowledge. Furthermore, we will delve into how these theoretical frameworks translate into tangible advancements that enhance the human experience, from the realm of quantum mechanics to the burgeoning field of nanotechnology. By bridging the gap between theory and application, we endeavour to harness the power of scientific discovery to enrich and transform lives on a global scale.

The following sessions will be organised:

- Round table: Fostering Global Scientific Partnerships in Basic Science - The European-Korean Connection
- Recent developments in mathematics for industrial problems and real-world applications
- Computational Physics: Advancing Research through Simulation and Modelling
- Bridging the Spectrum: A Convergence of RF-Microwave, Terahertz, Photonics, and Quantum Technologies
- Quantum Science and Technologies
- Future of Astronomy
- From COVID-19 to the Next: Interdisciplinary Approaches for Pandemic Preparedness
- Characterization to manipulation in nano technology

We invite abstract submissions across a wide spectrum of basic sciences, encompassing mathematics, physics, astronomy, chemistry, biology, and earth science.

## Tuesday, 30th July, 2024

## [BS1] (Round table) Fostering Global Scientific Partnerships in Basic Science - The European-Korean Connection

11:00-12:40

@ OC0.03

Chair : DR. KIM, Minjae, University of Warwick

Time

Title

Presenter

11:00

Prof. Seong Keun Kim,  
(President of POSTECH)

Dr. Yoon-Kyung Hyun,  
(the National Institute for  
Mathematical Sciences)

Prof. Myungshik Kim,  
(Imperial College London)

Dr. Yeon Joo Lee,  
(Institute for Basic Science)



### Wednesday, 31st July, 2024

#### [BS2] Bridging the Spectrum: A Convergence of RF-Microwave, Terahertz, Photonics and Quantum Technologies

09:00 - 10:40

@ OC1.03

Chair : DR. PARK, Saejun, Queen Mary University of London  
DR. SHIN, Sang-hee, Sejong University

Time	Title	Presenter
9:00	Sensitive THz systems with Non-Hermitian Metasurfaces	DR. KIM, Teun-teun (University of Ulsan)
9:20	Quantum-Dot Light-Emitting Diode Technologies toward Next-Generation High-Image-Quality Immersive Displays	DR. JUNG, Sung-min (University of Cambridge)
9:40	Mechanical Modulation of Lead halide Perovskite Phonon-Polaritons in THz Flexible Fabry-Perot Cavity	DR. KIM, Hwansik (Queen Mary University of London)
10:00	Microwave to THz: Precision Metrology to New Applications (Quantum Computing)	DR. SHIN, Sanghee (Sejong University)
10:20	Free-space and on-chip terahertz metamaterials: biosensing and other applications	DR. PARK, Saejune (Queen Mary University of London)

#### [BS3] Quantum Science and Technologies

11:00-12:40

@ OC1.03

Chair : DR. LIM, Jongseok, Imperial College London

Time	Title	Presenter
11:00	Extreme conditions tuning of two dimensional quantum materials – uncovering new magnetic and electronic states	DR. COAK, Matthew (University of Birmingham)
11:25	Linear Algebra Computer called Quantum Computer	DR. JOO, Jaewoo (University of Portsmouth)
11:50	Quantum vortex collider in ultracold atomic superfluids	PROF. KWON, Woojin (Ulsan National Institute of Science And Technology)
12:15	Quantum Science and Technologies using Ultracold Molecules	DR. LIM, Jongseok (Imperial College London)

### Wednesday, 31st July, 2024

#### [BS4] From COVID-19 to the NEXT: Interdisciplinary Approaches for Pandemic Preparedness

16:20-18:00

@ OC1.03

 Chair : DR CHOI, Yoon Hong, UK Health Security Agency  
 PROF. LEE, Jee Hyun, Yonsei University

Time	Title	Presenter
16:20	Adopting multidisciplinary and collaborative approaches to tackle future pandemics in the context of pressured healthcare systems	DR. ADAMS, Elisabeth (Aquarius Population Health)
16:40	Post-COVID-19 Respiratory Virus Trends and Future Predictions	PROF. LEE, Jacob (Hallym University)
17:00	Prediction, control, and phase transition in complex contagion processes	DR. JHUN, Bukyoung (Central European University)
17:20	Parameter estimation of the an influenza model using Physics-informed neural networks(PINNs)	PROF. KWON, Hee-dae (Inha University)
17:40	Investigating linguistic bias in large language models: A case study of Korean text generation	MISS. PARK, Narae (University of Oslo)
17:50	Mathematical modelling on the recent Pertussis resurgence in the UK	DR. CHOI, Yoon Hong (UK Health Security Agency)

### Thursday, 1st August, 2024

#### [BS5] Recent Developments in Mathematics for Industrial Problems and Real-Word Applications

09:00 - 10:40

@ OC1.03

Chair : DR. HA, Taeyoung, National Institute for Mathematical Sciences

Time	Title	Presenter
09:00	Topological relational data analysis	DR. WOO, Youngho (National Institute for Mathematical Sciences)
09:30	Extracting insights of classification for Turing pattern with feature engineering	PROF. LEE, Seunggyu (Korea University)
10:00	Case study of Improving Global Supply Chain Risk Identification Using RCF	DR. GIM, Minjung (National Institute for Mathematical Sciences)
10:00	Recent implicit neural representation-based approach for solving non-linear inverse problem of dental CBCT	DR. PARK, Hyoun suk (National Institute for Mathematical Sciences)
10:00	Development of Integrated Core Software for Digital Density	DR. JEON, Kiwan (National Institute for Mathematical Sciences)

## [BS] - BASIC SCIENCE

**Thursday, 1st August, 2024**

### [BS6] Future of Astronomy

**11:00-12:40 @ OC1.03 Chair : DR. KIM, Minjae, University of Warwick**

Time	Title	Presenter
11:00	Unveiling Venus, from afar and from up-close	DR. LEE, Yeon Joo (Institute for Basic Science)
11:30	Tracing back the birth environments of Type Ia supernova progenitor stars	DR. KIM, Young-lo (Lancaster University)
11:50	Decoding the puzzle of overlapping oscillations in asteroseismic binary star systems	MS. CHOI, Jeong Yun (Heidelberg University)
12:10	A lensed star candidate at Cosmin Noon	MS. CHOE, Suhyeon (Stockholm University)

### [BS7] Frontier of Physics

**14:00-15:40 @ OC1.03 Chair : DR. Kim, YOUNGCHAN, University of Surrey**

Time	Title	Presenter
14:00	Cage-Voyager: A Script Package for Mapping Self-Assembly Networks in the Chemistry of Organo-Metallic Cages	MR. SHIN, Donghan (University of Oxford)
14:20	The characterisation of amorphous and crystalline water ice in debris discs: insights from scattered light observations	DR. KIM, Minjae (University of Warwick)
14:40	Chasing the Dream: Room-Temperature Superconductors	DR. KIM, Sun-woo (University of Cambridge)
15:00	Neural network-assisted single-molecule localization microscopy with a weak-affinity protein tag	MS. JANG, Soohyeon (Johann Wolfgang Goethe-University)
15:20	Exploring the Masses of the Two Most Distant Gravitational Lensing Clusters at the Cosmic Noon through Infrared Weak Lensing with Hubble Space Telescope	DR. KIM, Jinhyub (University of Oxford)

**[CM] - CHEMICAL ENGINEERING AND MATERIAL SCIENCE**
**[CM] - CHEMICAL ENGINEERING AND MATERIAL SCIENCE**

DR. LEE, Juhan  
DR. LEE, Lauren Ye Seol

Heraeus Battery Technology GmbH  
University College London

The Chemical Engineering and Materials Science (CM) division at the Europe-Korea Conference on Science and Technology 2024 presents an array of sessions covering key topics in materials science, chemistry, and chemical engineering. The featured sessions include:

“Battery Cell Production in Europe: Full Power Ahead within Global Competition?”  
“Future Qualifications and Skills in Battery Ecosystem”  
“Advancements in Next-Generation Battery Technologies: Powering the Future”  
“Advanced Characterization Techniques on Material Science”  
“Battery Tutoring”  
“Advanced Functional Materials Ranging from Material Science to Space Applications”

“Optimization in Chemical Engineering and Chemistry via Machine Learning and Knowledge-Based Approaches”

The CM division offers a comprehensive platform for fostering collaboration and knowledge exchange among global experts encompassing a wide spectrum of relevant topics: battery technologies, sustainability of inorganic material processes, automated molecular discovery, and advanced modelling/optimisation methods in chemical engineering processes. Given the multidisciplinary and interdisciplinary nature of CM challenges, the division welcomes contributions that provide theoretical insights or demonstrate practical implementations in these fields.

**Wednesday, 31st July, 2024**
**[CM1] Advanced Characterization Techniques on Material Science**

**09:00 - 10:40 @ OC1.08 Chair : DR. PARK, Junbeom, Forschungszentrum Jülich GmbH**

Time	Title	Presenter
09:00	Nanostructured networks to overcome the limits of traditional materials: multiscale studies and industrialisation progress	DR. TILVE, David (IMDEA Materials)
09:40	Advancing Characterisation of Fibre Break Interaction via In-situ Synchrotron Tomography and Digital Volume Correlation	MISS. LEE, Yeajin (University of Southampton)
10:00	Linking Bulk and Surface Structures in Complex Mixed Oxides	MR. NAM, Kyeonghyeon (Fritz-haber-institute of The Max-planck-society)
10:20	Surface Chemistry of InP Quantum Dots and its Connectivity with Electroluminescence Devices	DR. KIM, Jiyong (Fraunhofer IAP)

**[CM2] Battery Tutoring**

**11:00-12:40 @ OC1.08 Chair : DR. LEE, Keon Woo, Henkel AG & Co. KGaA**

Time	Title	Presenter
11:00	Introduction to key materials inside lithium-ion batteries	DR. LEE, Keon Woo (Henkel Ag & Co. KGaA)
11:40	Fundamentals and roles of electrochemistry for energy storage applications	DR. LEE, Juhan (Ek-debatt)
12:10	Carbon Nanotube : Novel Conductive Agent beyond Battery applications	DR. BOERZSOENYI, Gabor (Lg Chem Europe GmbH)

## Wednesday, 31st July, 2024

### [CM3] Advanced Functional Materials Ranging from Material Science to Space Applications

**16:20-18:00 @ OC1.08** Chair : DR. KONG, Kyungil, University of Bristol  
DR. KANG, Kyongok, Forschungszentrum Jülich GmbH

Time	Title	Presenter
16:20	Interfacial Engineering of Liquid Metal: Fundamentals and Applications	PROF. KOO, Hyung-jun (Seoul National University of Science & Technology)
16:50	High-performance polymer materials for deployable satellite applications	DR. RIVERA LOPEZ, Mayra Yadira (University of Bristol)
17:15	Non-destructive Polymerisation Observation of Polybenzoxazine Nanocomposite Blends for Space Applications	DR. KONG, Kyungil (University of Bristol)
17:30	Molecular-Level Insights into Carbon Nanotube Hybrid Thermoelectrics: From Organic Small Molecules to Lanthanide Oxides	DR. KIM, Tae-hoon (Technische Universität Dresden)
17:45	Buckling investigation for deformation of reconfigurable architected material from electrochemical effect	MR. JEON, Joonyeob (Technical University of Denmark)

## Thursday, 1st August, 2024

### [CM4] Advancements in Next Generation Battery Technologies: Powering the Future

**09:00 - 10:40 @ OC1.08** Chair : DR. IM, Eunmi, Forschungszentrum Jülich GmbH

Time	Title	Presenter
09:00	Lithium-Alloy Anodes in Solid-State Batteries	PROF. PASTA, Mauro (University of Oxford)
09:50	Development of sodium-ion battery cells: a sustainable journey from materials to cell prototypes	DR. HASA, Ivana (The University of Warwick)
10:30	Unveiling the electrochemical characteristics of Na-CO <sub>2</sub> battery through NASICON-Based hybrid cells	DR. IM, Eunmi (Forschungszentrum Jülich GmbH)

## Thursday, 1st August, 2024

### [CM5] Battery Cell Production in Europe: Full Power Ahead within the Global Competition

11:00-12:40 @ OC1.08 Chair : DR. BRINGS, VDI/VDE Innovation + Technik GmbH

Time	Title	Presenter
11:00	Putting Science into the European Batteries Regulation	DR. BRUCHHAUSEN, Matthias (European Commission - Joint Research Centre)
11:25	Battery production and development in Europe: status, innovation and future prospects	DR. KIM, Sangwon (KIST Europe)
11:50	The European battery ecosystem and current developments in the European funding landscape	MR. BRUNNER, Simon (VDI/VDE Innovation + Technik GmbH)
12:15	Pre-Charging Strategies of Alkali-Metal-Ion Batteries for Enhanced Energy Density and Extended Cycle Life	MR. JOO, Hyunsang (Helmholtz Institute Münster)

### [CM6] Future Qualifications and Skills in Battery Ecosystem

14:00-15:40 @ OC1.08 Chair : DR. BRINGS, VDI/VDE Innovation + Technik GmbH

Time	Title	Presenter
14:00	Project ALBATTIS - Developing an European Blueprint for Collaboration on Skills and Education	MR. SPÁNYIK, Marek (Vsb - Technical University Of Ostrava)
14:25	Building VET expertise for battery cell production in the German capital region	MRS. SCHMIDT, Christine (Ibbf)
14:50	Aspects of Future qualifications and skills in battery ecosystem in connection with Global Sustainable Development goals 2030	DR. BRINGS, Christin (Vdivdeit Berlin)

**Thursday, 1st August, 2024**

**[CM7] Optimisation in Chemical Engineering and Chemistry via Machine Learning and Knowledge-based Approaches**

16:00-17:40

@ OC1.08

Chair : DR. LEE, Lauren Ye Seol, University College London

Time	Title	Presenter
16:00	Autonomous design of products and processes: Generative Chemical Transformer to reinforcement learning-guided combinatorial chemistry	MR. SPÁNYIK, Marek (Vsb - Technical University) NA, Jonggeol (Ewha Womans University)
16:30	Digital discovery and synthesis of advanced materials	DR. BESENHARD, Maximilian (University College London)
16:50	Discrete and mixed-variable experimental design with surrogate-based approach	MISS. ZHU, Mengjia (University Of Manchester)
17:00	(Roundtable Discussion) Powering the Future of Chemical Engineering	



**[EE] - ENVIRONMENT AND ENERGY**

DR. LEE, Eun Young  
DR. AHN, Hyungwoong

University of Vienna  
University of Edinburgh

Exploring science and engineering in the environment and energy fields is the key to unlocking a sustainable future filled with innovation. It is about understanding the challenges we face, such as climate change, environmental degradation, resource depletion, and energy insecurity, as well as crafting inventive solutions that safeguard both humanity and our planet. This dynamic field drives the development of groundbreaking technologies in renewable energy, pollution mitigation, waste management, and beyond. These innovations pave the way for a transition towards a more resilient and eco-friendly system, ensuring a brighter tomorrow for generations to come. Moreover, the wealth of scientific and data-driven evidence provides invaluable insights that guide policy-makers and educate stakeholders and the public, towards sustainable solutions from local initiatives to worldwide agreements. As Korea emerges as a frontrunner in cutting-edge technologies and the EU

spearheads the charge towards energy transition and sustainability, the potential for collaboration between these powerhouses is limitless. This partnership not only amplifies the impact of their efforts but also sparks new avenues of collaboration, where knowledge, insights, and ideas converge to shape a greener, more resilient future.

At EKC2024, our division is deeply engaged in the dynamic realm of environment and energy research, driven by curiosity, innovation, and boundless collaboration aimed at forging a sustainable future. We welcome sessions and presentations in the following areas:

- Carbon-neutral technology
- Environmental pollution and waste management
- Renewable energy and hydrogen technology
- Geosciences and geotechnologies
- Sustainability and technological innovations

**Wednesday, 31st July, 2024**
**[EE1] Simulations and Modelling in Environmental and Energy Sciences**

**09:00 - 10:40 @ OC1.09 Chair : PROF. PARK, Junho, Coventry University**

Time	Title	Presenter
09:00	Multi-scale modelling of urban air pollution: development and application of MUNICH	DR. KIM, Youngseob (Cerea, Ecole Des Ponts, Edf R&d)
09:20	Development of AI-driven composite sensor for energy efficiency in water treatment plant	MR. AN, Sang-byeong (K-water Research Institute)
09:40	Application of Electrospinning of Functional Materials for Sustainable Energy Storage System	DR. CHEONG, Jun Young (University of Glasgow)
10:00	Solar thermal integrated flow cell system for green hydrogen production	DR. BAE, Dowon (Loughborough University)

**[EE2] Towards an Understanding of Human Activities, Environments, and Their Interactions- Living in the Anthropocene**

**11:00 - 12:40 @ OC1.09 Chair : DR. LEE, Eun Young, University of Vienna**

Time	Title	Presenter
11:00	The Anthropocene is real despite news to the contrary!	PROF. WATERS, Colin (University of Leicester, UK)
11:30	Anthropogenic fly ash particles: Environmental indicators of industrial combustion	PROF. ROSE, Neil (University College London, UK)
12:00	Assessment of long-term human influence on the landscape based on single-grain luminescence dating techniques	MR. CHOI, Jungyu (Wageningen University And Research)
12:15	Plastic-rich sediments can cause alteration of Earth's surface processes	DR. LEE, Eun Young (University of Vienna, Austria)

**[EE] - ENVIRONMENT AND ENERGY**
**Wednesday, 31st July, 2024**
**[EE3] Sustainable and Circular Economy on Energy and Environmental Processes**
**16:20-18:00 @ OC1.09 Chair : DR. PAEK, Min-kyu, Research Institute of Industrial Science & Technology**

Time	Title	Presenter
16:20	Developments on pyrometallurgical recycling of metals and the journey to carbon net-zero	DR. TESFAYE, Fiseha (Åbo Akademi University And Metso Metals Oy)
16:45	Lithium recovery and product purity from Li-containing minerals and slags via chlorination roasting process	DR. HEO, Jungho (Korea Institute Of Geoscience And Mineral Resources)
17:10	Reaching carbon neutrality through an industrial recycling in Gyeongsangbuk-do, Korea	PROF. LEE, Wontae (Kumoh National Institute Of Technology)
17:35	Scale-up of dehydrogenation reaction system for biomass and carbon dioxide conversion	DR. SONG, In Hyoup (Korea Research Institute Of Chemical Technology)

**Thursday, 1st August, 2024**
**[EE4] Optoelectronic Materials and Devices for Sustainability**
**09:00 - 10:40 @ OC1.09 Chair : DR. SEO, Seongrok, University of Oxford**

Time	Title	Presenter
09:00	Innovating Solutions for Perovskite and Battery Research	MR. LEE, Won Tae (Korea Kiyon)
09:40	Analysis of reuse performance of demolished PV panels	DR. LEE, Jaejin (Sungchang Co.)
10:10	Efficient Charge Carrier and Light Management for Perovskite-Silicon Tandem Solar Cell Through surface charge extraction contacts	DR. SEO, Seongrok (University of Oxford)

**[EE5] Sustainable Waste and Wastewater Management**
**11:00-12:40 @ OC1.09 Chair : PROF. KIM, Boram, National Institute for Applied Science (INSA)  
DR. YOON, Young-sam, National Institute of Environmental Research**

Time	Title	Presenter
11:00	Effect analysis on waste recycling by introducing a new policy, "Environmental Assessment of Recycling," for establishment of the ESG management system in the Republic of Korea	DR. YOO, Heungmin (National Institute of Environmental Research)
11:25	Unmodified hydrochar from co-hydrothermal carbonization of sawdust and non-dewatered sewage sludge as a potential adsorbent for heavy metals	DR. KIM, Boram (INSA Lyon)
11:50	Efficient management of waste resources for intensifying recycling - Focusing on medical waste	MS. PARK, Yoon Soo (National Institute of Environmental Research)
12:15	Investigating the physical and chemical characteristics and dynamics of ship exhaust in coastal environments	DR. JEONG, Seongho (University of the Bundeswehr)

**Thursday, 1st August, 2024**
**[EE6] Decarbonization of the power and industrial Plans through Enabling Technologies**
**14:00-15:40 @ OC1.09 Chair : DR. AHN, Hyungwoong, University of Edinburgh**

Time	Title	Presenter
14:00	How can bioenergy with carbon capture and storage contribute to the hydrogen market?	DR. SIMS, Michael (Wild Hydrogen Ltd)
14:40	Liquid Hydrogen Refueling Station (LHRS) Process and safety technology Development for future Environment solution and clean energy utilization	PROF. HWANG, Jihyun (Korea Institute of Energy Technology)
15:10	Liquid Hydrogen Refueling Station (LHRS) Process and safety technology Development for future Environment solution and clean energy utilization	DR. CHOI, Yejung (Sintef)

**[EE7] Offshore Renewable Energy**
**16:00-17:40 @ OC1.09 Chair : MR. LEE, Hyunjoo, Offshore Renewable Energy Catapult**

Time	Title	Presenter
16:00	Life estimation and in-field usage monitoring for the blade bearing of wind turbine	MR. SONG, Wooyong (Ore Catapult)
16:20	Development of O&M Technology for Offshore Wind Energy Systems in Korea	DR. LEE, Gwang-se (Korea Institute of Energy Research)
16:40	Experimental Study on the Response Characteristics of Sensors for Early Detection of Thermal Runaway in ESS	MR. PARK, Moonwoo (FILK)
17:00	R&D trend in offshore wind industry	MR. LEE, Hyunjoo (Offshore Renewable Energy Catapult)

## [EI] - ELECTRICAL, ELECTRONICS, & INFORMATION ENGINEERING

### [EI] - ELECTRICAL, ELECTRONICS, & INFORMATION ENGINEERING

DR. HAH, Dooyoung  
DR. CHOI, Changkyu

Abdullah Gul University  
UiT The Arctic University of Norway

Recent development in Electrical, Electronics & Information Engineering is reshaping the society in an unprecedented manner. Advancement in electronic devices and systems, telecommunication networks, power distribution, artificial intelligence, and software engineering affects our daily lives in every possible aspect. The speed of technology development is yet increasing because of the market demand for innovation as well as high competition. At EKC2024, the Electrical, Electronics & Information Engineering (EI) division aims to deliver a number of sessions that embrace a broad range of subjects within the discipline.

This year, the EI division will be highlighted with various aspects and applications of artificial intelligence. Following sessions will be organized.

- Envisioning the Future of Artificial Intelligence in Europe and Korea (Keynote & Round Table)
- Deep Learning for Computational Medicine and Health Care
- On-Device AI and the Future of AI Applications
- Maximizing Business Insights: The Intersection of Technology, Data Analytics, and Strategic Management

The EI division will also present the following sessions.

- Theory and Practice of Computer Science and Innovative Information Technology
- Advanced Manufacturing for Surgical Devices and Healthcare Applications
- Innovative Semiconductor Devices, Circuits, Packaging and Systems, and their Scientific and Industrial Applications
- New Technological Developments for Supporting Healthcare

As EI division, we would like to welcome abstract submission in the broad area of Electrical, Electronics & Information Engineering.

## Tuesday, 30th July, 2024

### [EI1] Maximizing Business Insights: The Intersection of Technology, Data Analytics and Strategic Management

11:00-12:40

@ OC1.02

Chair : DR. KANG, Esther, University of Bristol

Time	Title	Presenter
11:00	From Theory to Practice: Comprehensive Insights into Community Detection in Networks	MR. HA, Gyeong-gyun (King's College London)
11:20	From Firms to Natural Resources: Shifting the Spotlight in Mining Company-Community Conflicts	DR. SHIN, Jiyoung (University Of Bristol Business School)
11:40	Factors Driving Attraction and Retention of Booth Visitors in Commercial Exhibitions : An Analysis of Digital Trace Data	DR. PARK, Changwon (Brunel University London)
12:00	Understanding eHealth service processes involving service design methods	DR. LEE, Eunji (Chalmers University of Technology)
12:20	Cognitive Challenges in Double Discount Processing and Mitigation Strategies	DR. KANG, Esther (University of Bristol Business School)

**[EI] - ELECTRICAL, ELECTRONICS, & INFORMATION ENGINEERING**
**Wednesday, 31st July, 2024**
**[EI2] Envisioning the Future of Artificial Intelligence in Europe and Korea**
**09:00 - 10:40 @ OC1.01 Chair : DR. CHOI, Changkyu, UiT The Arctic University of Norway**

Time	Title	Presenter
09:00	Towards eXplainable AI (XAI) with deep learning	PROF. JENSSEN, Robert (UiT The Arctic University of Norway)
10:00	After a 10-minute break, the panel discussion will start at 10. Details about the panels will be announced later.	

**[EI3] Deep Learning for Computational Medicine and Healthcare**
**11:00-12:40 @ OC1.01 Chair : DR. SEO, Hyewon, CNRS--University of Strasbourg**

Time	Title	Presenter
11:00	Uncertainty in Medical Image Classification	DR. NOVOTNY, Johannes (VRVis)
11:35	Formulating Explainability Principles for a Self-explainable AI through Information Theoretic Learning	DR. CHOI, Changkyu (UiT The Arctic University Of Norway)
11:55	Applications of a Histology Image-based Deep Learning Model in Molecular Profiling of Prostate Cancer	MR. JUNG, Taewoo (Ghent University)
12:10	Gene Re-Prioritization in Cancer Cell Lines: Integrating Protein-Protein Interaction Networks with Genomic Profiles Through Graph Neural Networks	MR. LIM, Jihwan (Ghent University)
12:25	Enhancing Gait Video Analysis in Neurodegenerative Diseases by Knowledge Augmentation in Vision Language Model	DR. SEO, Hyewon (CNRS--Univ. Strasbourg, France)

**[EI4] On-Device AI and Future of AI Applications**
**16:20-18:00 @ OC1.01 Chair : DR. KWON, Jagun, Samsung Research UK**

Time	Title	Presenter
16:20	Audio-Visual Virtual Reality as an AI Application	DR. KIM, Hansung (University of Southampton)
16:45	Distributed Multi-Agent Q-Learning Gains for Mega-Machine Type Networks	DR. KO, Youngwook (University of York)
17:10	Human-centred visual learning and its applications	PROF. CHANG, Hyung Jin (University of Birmingham)
17:35	Large-scale 3D Map Building Using Multiple Camera-Based Visual SLAM and Enhanced Visual Localization Method	PROF. JO, Hyunggi (Jeonbuk National University)

**Thursday, 1st August, 2024**

**[EI5] Innovative Semiconductor Devices, Circuits, Packaging and Systems, and their Scientific and Industrial Applications**

**09:00 - 10:40 @ OC1.01 Chair : DR. CHOI, Jung Han, Fraunhofer Heinrich-Hertz Institute  
DR. CHOI, Heungjae, Cardiff University**

Time	Title	Presenter
09:00	CPW sensor for nerve-agents detection	PROF. KIM, Jung Mu (Jeonbuk National University)
09:20	Glass substrate technology for modern 3D package	DR. CHOI, Jung Han (Fraunhofer Heinrich-hertz Institute)
09:40	Compound semiconductor package technology trends and recent development of RF materials	DR. KIM, Juwan (Rf Materials)
10:00	RF GaN Devices and Characterization	DR. CHOI, Heungjae (Cardiff University)
10:20	Advancing Power Devices with Wide Bandgap Materials: SiC and GaN Technologies for High-Power Applications	MR. LEE, Junho (Rise Research Institutes of Sweden Ab)

**[EI6] Theory and Practice of Computer Science and Innovative Information Technology**

**11:00-12:40 @ OC1.01 Chair : DR. KIM, Ju Hoon, Deutsche Telekom AG**

Time	Title	Presenter
11:00	Digitalization and Data Management as a fundamental basis for AI	DR. CHEONG, Jae Sook (University Of Bayreuth)
11:40	Advancing Personalized Federated Learning: Group Privacy, Fairness, and Beyond	DR. JUNG, Kangsoo (Inria)
12:00	Modeling programming processes for providing feedback using limited data	MISS. SONG, Jayeong (University of Oslo)
12:20	The Critical Role of Time Synchronization in Modern Telecommunications	DR. KIM, Juhoon (Deutsche Telekom AG)



**Thursday, 1st August, 2024**

**[EI7] New Technological Developments for Supporting Healthcare**

**14:00-15:40**

**@ OC1.01**

**Chair : PROF. KIM, Yeongmi, MCI**

Time	Title	Presenter
14:00	New Technological Developments for Surgical Simulation	PROF. HARDERS, Matthias (University of Innsbruck)
14:30	AR Demonstrator for Healthcare at Home	MR. NOH, Junhyun (University of Twente)
14:45	Development of a Mobile Device to Prevent Accidental Drowning by Monitoring Respiratory Activity	MR. WINKLER, Simon (MCI)
15:05	Automatic detection and diagnosis of focal liver lesions based on multiparametric hepatocyte-specific contrast-enhanced magnetic resonance imaging	MS. OH, Min Young (Semmelweis University)
15:20	Digitization of Rehabilitation for Enhanced Stroke Recovery	PROF. KIM, Yeongmi (MCI)

## [LH] - LIFE SCIENCE AND HEALTH

### [LH] - LIFE SCIENCE AND HEALTH

DR. LEE, Seung Seo  
DR. LEE, Kyung Min

University of Southampton  
University of Helsinki

The Life Science and Health division will reflect the contemporary trends in the area. As life sciences evolve, they are increasingly multidisciplinary, mirroring trends seen in other modern science areas. Therefore, our sessions will cover overarching themes that encompass not only 'pure' biological sciences, life sciences and health research but also highly multidisciplinary topics combined with other areas such as computations, artificial intelligence, data science, information technology, material science, other engineering sciences, and physical sciences.

LH sessions will provide the experts from Korea and Europe with opportunities to engage in discussions about the latest progress in these ever-changing areas and foster connections for future collaboration.

We invite presentations covering the following areas:

- One Health: understanding diseases and pathogens
- Aging and Diseases
- Cutting-edge Technology to Fight Against Vision-threatening Diseases
- Exploring Multifaceted Approaches to Reducing the Cancer Burden and Promoting Health
- Cell Plasticity and Homeostasis: Unraveling Multipotency in Health and Disease
- Many Ways to Address the Antimicrobial Resistance Issue
- Excellence with Impact: Disruptive Innovations in the Biomedical Space
- New Ideas and Approaches in Biological Sciences

## Tuesday, 30th July, 2024

### [LH0] Innovative Technology for Protein Engineering and Science & (Roundtable Discussion) Europe-Korea Partnership: Advancing Frontiers in Biosciences and Biotechnology

**09:00 - 10:40 @ OC1.04** **Chair : DR. WOO, Eui-Jeon, KRIBB**  
**DR. LEE, Kyung Min, University of Helsinki**

Time	Title	Presenter
09:00	Rational Ribosome Engineering to Modulate Protein Folding and Expression	DR. AHN, Minkoo (University of Bristol)
09:25	Computational protein design for biopharmaceuticals and industrial enzyme	DR. WOO, Eui-jeon (KRIBB)
09:50	Roundtable Discussion with Dr Kim, Jang-Seong (KRIBB), Profs Choi, Insung (KAIST) and MOK, K. Hun (Trinity College Dublin)	DR. KIM, Jang-seong (KRIBB)

### [LH1] At the Front Line of BioPhysics

**11:00-12:40 @ OC1.04** **Chair : DR. LEE, Seung Seo, University of Southampton**

Time	Title	Presenter
11:00	Direct and Distant Cellular Communication	PROF. LEE, Jong-Bong (POSTECH)
11:25	The role of biophysics in the personalized treatment of cancer	PROF. KENAR LIM, Necla (Kocaeli University)
11:50	Self-Assembly of DNA Nanostructures using DNA Origami	DR. BAE, Wooli (University of Surrey)
12:15	Quantum Biology Research using Engineered Fluorescence Proteins	DR. KIM, Youngchan (University of Surrey)

## Wednesday, 31st July, 2024

### [LH2] Excellence with Impact: Disruptive Innovations in the Biomedical Space

09:00 - 10:40

@ OC1.04

Chair : PROF. MOK, K. Hun, Trinity College Dublin

Time	Title	Presenter
09:00	Predictive modelling of liquid ingress into disintegrating pharmaceutical tablets	MR. LEE, Jongmin (University of Cambridge)
09:15	Micro-magnetophoretic Circuit as Preprocessing Method for Single-cell Genomic Analysis in Universal Usage of CTC Liquid Biopsy	MR. LEE, Chanhee (Lmmtic Biotech)
09:30	Thermally Drawn Programmable Shape Memory Polymer Fibres for Medical Applications	DR. CHOI, Jiwoo (Imperial College London)
09:50	Next-Generation Technologies for Precision Molecular Cancer Diagnostics	PROF. IM, Hyungsoon (Massachusetts General Hospital)
10:15	Magnetic Particle Imaging: An Early Detection System for Cancer and Neurodegenerative Diseases	DR. HONG, Hyobong (ETRI)

### [LH3] New Ideas and Approaches in Biological Sciences

11:00-12:40

@ OC1.04

Chair : DR. LEE, Seung Seo, University of Southampton

Time	Title	Presenter
11:00	Single-Cell Nanoencapsulation: Past, Present, and Future	PROF. CHOI, Insung (KAIST)
11:30	Self-healable double-network hydrogel for new platform to construct biomimetic environment with bottom-up approach	PROF. KOH, Won-gun (Yonsei University)
11:50	Polymer nanoparticles for mRNA delivery	PROF. KIM, Won Jong (Postech & OmniaMed)
12:10	Highly Parallel and Programmable Single-molecule force spectroscopy by light-guided patterning	DR. CHOI, Hansol (Harvard Medical School)
12:25	Sequence-controlled Amphiphilic Polyaspartamide Derivatives for High mRNA Transfection	DR. BHAK, Ghibom (The University of Salamanca)

### Wednesday, 31st July, 2024

#### [LH4] Cutting-Edge Technology to Fight Against Vision-Threatening Diseases

**16:20-18:00 @ OC1.04 Chair : PROF. RHO, Seungsoo, CHA Bundang Medical Center  
PROF. KIM, Young Kook, Seoul National University**

Time	Title	Presenter
16:20	Nocturnal Artificial Light Exposure and the Risk of Strabismus, Age-Related Macular Degeneration, and Adverse Birth Outcomes	PROF. HA, Ahnul (Jeju National University)
16:45	Visual Impairment, Blindness, and a Public Health Approach	PROF. KIM, Young Kook (Seoul National University)
17:10	The use of fluorinated gases and quantification of carbon emission for common vitreoretinal procedures	PROF. PARK, Dong Young (University of Warwick)
17:35	Neuroprotective effect of nicotinamide-loaded extracellular vesicles against glaucoma	PROF. RHO, Seungsoo (CHA University)

### Thursday, 1st August, 2024

#### [LH5] Cell plasticity and homeostasis: How the cells reponse upon different stimuli and stress

**09:00 - 10:40 @ OC1.04 Chair : MS. SONG, Yura, Université Libre de Bruxelles**

Time	Title	Presenter
09:00	Biologically grown living materials for biotechnological applications	DR. OH, Jeong-joo (Delft University of Technology)
09:20	Strategies for Enhancing Cell Activity and Stability in Bioprocess Operations	DR. LEE, Mungyu (Delft University of Technology)
09:40	Cell type and stage specific transcriptional, chromatin and cell-cell communication landscapes in the mammary gland	MISS. SONG, Yura (Université Libre De Bruxelles (ULB))
10:00	Formation and maintenance of muscle domains	DR. KIM, Minchul (Igbmc)
10:20	Transcriptomic dissection analysis of longevity factors acting in insulin/IGF-1 signaling in <i>Caenorhabditis elegans</i>	DR. HAM, Seokjin (CNIO)

## Thursday, 1st August, 2024

### [LH6] Exploring Multifaceted Approaches to Reducing the Cancer Burden and Promoting Health

**11:00-12:40 @ OC1.04 Chair : DR. NOH, Hwayoung, Leon Berard Cancer Center (CLB)**

Time	Title	Presenter
11:00	Supporting Europe's Beating Cancer Plan- its Flagship Initiatives at the Joint Research Centre of the European Commission (EC-JRC)	DR. STEPIEN, Magdalena (Joint Research Centre of The European Commission)
11:25	Plant-based Dietary Patterns and Cancer Prevention	PROF. KIM, Ji Hye (Kyung Hee University)
11:50	Mechanism and Technology of Photodynamic Therapy and Its Application in Laser Induced Cancer Treatments	PROF. LIM, Hyun Soo (Sakarya University of Applied Science)
12:15	Impact of Physical Activity Interventions on Cancer-Related Sequelae: Insights from the Léon Bérard Comprehensive Cancer Center	DR. NOH, Hwayoung (Léon Bérard Comprehensive Cancer Centre (CLB))
12:30	Impact of Portal/Superior Mesenteric Vein Abutment Angle on Prognosis in Resectable Pancreatic Cancer (Poster Flash Presentation)	MR. HEO, Danhui (AUniversity of Szeged)

### [LH7] Aging and Diseases

**14:00-15:40 @ OC1.04 Chair : PROF. LEE, Soyoung, Johannes Kepler University**

Time	Title	Presenter
14:00	Senescence in cancer – clinical opportunities and challenges	PROF. SCHMITT, Clemens (Johannes Kepler University)
14:30	Understanding plasticity in mouse development	DR. HAN, Ju Yeon (European Molecular Biology Laboratory)
14:50	Targeting senescence for therapeutic benefit	PROF. GIL, Jesús (Imperial College London)
15:20	Disease-Selective Nanomedicines for the Treatment of Fibrosis and Obesity	DR. BYUN, Junho (Ghent University)

**Thursday, 1st August, 2024**

**[LH8] One Health: Understanding Diseases and Pathogens**

**16:00-17:40**

**@ OC1.04**

**Chair : DR. HAN, Sojung, University of Vienna**

Time	Title	Presenter
16:00	Deciphering context-specific cancer fitness levels: unraveling the key driver genes in tumor progression	DR. PARK, Solip (Centro Nacional de Investigaciones Oncológicas)
16:20	Indirect attenuation of Staphylococcus aureus skin infection by modulation of pathogen helper bacteria	DR. SEO, Hwi Won (KRIBB)
16:40	Dynamic Shifts and Resilience of Sink Drain Bacterial Communities	PROF. GWEON, Hyun Soon (University of Reading)
17:00	Overseas Training Support Project: Enhancing Global Research Competencies of Biomedical Talents	PROF. KIM, Jong-il (Seoul National University)
17:20	Pathogen evolution and historical samples	DR. HAN, Sojung (University of Vienna)



## [NF] - NUCLEAR AND FUSION TECHNOLOGY

## [NF] - NUCLEAR AND FUSION TECHNOLOGY

DR. KIM, Byoung Yoon  
DR. KIM, Hyun-tae

ITER Organization  
UK Atomic Energy Authority

EKC 2024 Nuclear and Fusion Technology (NF) division provides a unique opportunity for interdisciplinary collaboration, fostering discussions that span from fundamental research to practical applications on Nuclear technology and fusion technologies. We invite abstracts from scientists and engineers working in fields such as reactor physics, materials science, nuclear engineering, plasma physics, and more. Your contribution will enrich our field, such as, next-generation fuel cycles and waste management strategies, safety advancements and regulatory considerations in nuclear fission, fusion reactor designs, experimental results, and theoretical models, materials challenges and innovations for both fission and fusion technologies, cross-cutting themes addressing the societal, economic, and environmental aspects of nuclear energy,

Our NF division is organizing three sessions to facilitate abstract submissions.

- Overview of nuclear fusion research status
- Nuclear and fusion engineering and technologies
- [Roundtable] Fusion energy strategy and roadmap among EU, Korea, and UK

Please join us as we delve into the forefront of nuclear and fusion technology, shaping the future of energy with your insights and expertise.

## Wednesday, 31st July, 2024

## [NF1] Overview of Nuclear Fusion Research Status

09:00 - 10:40 @ OC0.04 Chair : DR. KIM, Hyun-tae, UK Atomic Energy Authority

Time	Title	Presenter
09:00	Integrated interdisciplinary engineering efforts towards realisation of a fusion power plant	PROF. YOU, Jeong-ha (Max Planck Institute For Plasma Physics)
09:30	Status of Korea's fusion research activities and strategies to accelerate fusion energy commercialization	DR. OH, Yeongkook (Korea Institute of Fusion Energy)
10:00	A brief history of nuclear science	DR. KIM, Hyun-tae (UK Atomic Energy Authority)

## [NF] - NUCLEAR AND FUSION TECHNOLOGY

**Wednesday, 31st July, 2024**

### [NF2] Nuclear and Fusion Engineering and Technologies

**11:00 - 12:40 @ OC0.04 Chair : DR. KIM, Boseong, ITER Organization**

Time	Title	Presenter
11:00	Can material withstand 100 million degrees?: plasma-material interaction and its impact in tokamak	DR. MOON, Sunwoo (ITER Organization)
11:20	Two-phase heat transfer correlation considering flow instability phenomena under natural circulation system	DR. LIM, Sun Taek (ITER Organization)
11:40	Computational Approach to Solving Challenges in Fusion Reactor	DR. RA, Ookjoo (ITER Organization)
12:00	Automating the fitting of plasma profile into magnetic flux coordinate using Gaussian Process Regression in a fusion device KSTAR	MR. PYO, Dae-yeol (Seoul National University)
12:20	Status of ITER Korea contribution for ITER construction and job opportunities at ITER Organization	DR. JUNG, Kijung (Korea Institute Of Fusion Energy)

### [NF3] (Roundtable) Fusion Energy Strategy and Roadmap among EU, Korea and UK

**16:20-18:00 @ OC0.04 Chair : DR. KIM, Byoung Yoon, ITER Organization**

Time	Presenter			
16:20	DR. OH, Yeong Kook (Korea Institute of Fusion Energy (KFE))	DR. JUNG, Kijung (Korea Institute of Fusion Energy (KFE))	PROF. YOU, Jeong-ha (Max Planck Institute for Plasma Physics)	DR. KIM, Hyun-tae (UK Atomic Energy Authority)

**[MA] - MECHANICAL AND AEROSPACE TECHNOLOGY**
**[MA] - MECHANICAL AND AEROSPACE TECHNOLOGY**

PROF. PARK, Hyuk  
PROF. HAN, Woo-suck

Universitat Politècnica de Catalunya  
Ecole Nationale Supérieure des Mines de Saint-Etienne

The EKAMA (European-Korean Association of Mechanics and Aerospace) was founded in 2018 during EKC 2018 held in Glasgow, UK, to gather all Korean scientists and engineers working in Europe on Mechanical and Aerospace Engineering together from the 9 Korean associations in Europe. One of our aims is to build up a European network with all these members and to enhance specialized cooperation between Europe and Korea. As the slogan of EKC 2024, the cooperation between the scientific community and industrial communities, Green Industry, we focus on the transfer of technologies in the field of Transportation, such as future Automobiles, aerospace, in particular satellites. Moreover, because we are always interested in environmental problems, new trends in green technologies are one of our concerns. This is why green energy development is also a hot issue. The engineering approach for it,

especially the Mechanical one is welcome to be presented and discussed for our green earth. Aerospace is one of the main keywords of this division, especially satellites, because the need for telecommunication is exponentially growing as well as scientific purposes to observe our own earth to prevent environmental changes. Korea has made an important development in this field during the last decades and EKAMA has prominent members working in this field. It could be a good opportunity to join both parts to establish strong links. Digital twin is one of the key words of Industry 4.0 combining design and manufacturing processes. All applications using numerical simulation are welcome to show today's state of the art.

**Tuesday, 30th July, 2024**
**[MA1] Pioneering Space: Integrating Technology and Industry Innovations**

**11:00-12:40 @ OC1.06 Chair : PROF. PARK, Hyuk, Universitat Politècnica de Catalunya (UPC)  
PROF. HAN, Woo-suck, Ecole Nationale Supérieure des Mines de Saint-Etienne**

Time	Title	Presenter
11:00	Flow control via external applied magnetic fields	PROF. ALTMEYER, Sebastian Andreas (Universitat Politècnica de Catalunya)
11:30	Deimos Space, 23 years in the aerospace sector	DR. PASCUAL, Daniel (Deimos Space UK Ltd.)
12:10	New Space Education: Satellite Engineering	PROF. PARK, Hyuk (Universitat Politècnica De Catalunya)

**Wednesday, 31st July, 2024**
**[MA2] Robotics and Mechatronics**

**09:00 - 10:40 @ OC1.07 Chair : PROF. NAM, Saekwang, Kyungpook National University**

Time	Title	Presenter
09:00	Enhancing Robotics with Data Science: Advancements and Future Directions in Tactile Data	PROF. NAM, Saekwang (Kyungpook National University)
09:35	An innovative gripper design for dexterous cloth manipulation with a single robot arm	MR. LEE, Dongmyoung (Imperial College London)
10:10	Machine Learning Based Elastic Response Limit Analysis of 90° back-to-back Pipe Bends	MR. PARK, Joo Hyeong (Seoul National University of Science and Technology)

## [MA] - MECHANICAL AND AEROSPACE TECHNOLOGY

**Wednesday, 31st July, 2024**

### [MA3] Future/Smart Mobility

**11:00-12:40 @ OC1.07 Chair : PROF. YANG, Changho, Oxford Brookes University**

Time	Title	Presenter
11:00	Effect of Cooling Path Design of Gas Turbine Combustion Liner on Elastic Shakedown Boundary	MR. PARK, Heungsoo (Seoul National University of Science and Technology)
11:25	Evaluation of first prototype of Quad-Generation System for Rooftop Smart Farm	DR. CHOI, Jaejoon (Korea Institute of Energy Research)
11:40	Performance Evaluation of a Gas Turbine Blade Optimized through Response Surface Methodology Using Elastic Shakedown Limit Analysis	MR. KIM, Jun Beom (Seoul National University of Science and Technology)
12:20	Title: Basic Experiment and Evaluation for the Development of a Waste Heat Recovery System to Improve Fuel Efficiency and Reduce Harmful Emissions during Cold Starting of an Engine-Based Vehicle	PROF. KIM, Seung-soo (Silla University)

### [MA4] Frontiers in Space Engineering: Innovations and Collaborative Solutions

**16:20-18:00 @ OC1.07 Chair : DR. SON, Min, Universität der Bundeswehr München**

Time	Title	Presenter
16:20	Numerical simulation modeling and fault detection, diagnosis algorithms for a liquid-propellant rocket engine	DR. CHA, Jihyoung (Cranfield University)
17:00	Numerical Simulation of Hydrogen Absorption in Metal Hydride with Internal Fin and Embedded Heat Transfer Fluid Channel	MR. LEE, Dae Yeob (University Of Manchester)
17:30	Environmental Impact of Rocket Launches in the New Space Era	DR. SON, Min (Universität Der Bundeswehr München)

### Thursday, 1st August, 2024

#### [MA5] Advancing Technology for Modeling and Simulation (Digital Twin)

09:00-10:40 @ OC1.07 Chair : PROF. HAN, Woo-suck, Ecole Nationale Supérieure des Mines de Saint-Etienne

Time	Title	Presenter
09:00	Design and analysis of acoustic metamaterials for broadband noise reduction	DR. YANG, Jieun (Delft University Of Technology)
09:25	Development of Abaqus User Material Subroutine for Elastic Response Limit Analysis of 3D Structure under Combined Loading Conditions	MR. LEE, Dongwon (Seoul National University of Science and Technology)
09:50	Physics Informed Neural Network in Turbulent Porous Media Flow Reconstruction	MR. JANG, Seohee (The University Of Manchester)
10:15	Comparative Evaluation Of 3D-Printed Auxetic Titanium Stents: A Three-Point Bending Test and Finite Element Simulation Study	PROF. HAN, Woo-suck (Ecole Nationale Supérieure Des Mines De Saint-etienne)

#### [MA6] EKAMA / Hanwha Systems Collaboration for Empowering Innovation in Mechatronics and Aerospace

11:00-12:40 @ OC0.04 Chair : PROF. PARK, Hyuk, Universitat Politècnica de Catalunya (UPC)

Time	Title	Presenter
11:00	Development of Korean BFT Large Antenna Technology	DR. LEE, Chul Hyung (Hanwha Systems)
11:25	Performance Verification of the Micro-Vibration Isolation Equipment by Qualification Tests	DR. CHO, Mun Shin (Hanwha Systems)
12:15	Annual Meeting of European Korean Association of Mechatronics and Aerospace (EKAMA)	PROF. PARK, Hyuk (Universitat Politècnica De Catalunya)

## [MA] - MECHANICAL AND AEROSPACE TECHNOLOGY

**Thursday, 1st August, 2024**

### [MA7] Emerging Trends and Advancements in Aeronautics and Mechanical Engineering

**14:00-15:40 @ OC1.07 Chair : PROF. LEE, Juseong, Eindhoven University of Technology**

Time	Title	Presenter
14:00	Predictive aircraft maintenance in the era of big data and machine learning	PROF. MITICI, Mihaela (Utrecht University)
14:30	Risk-informed redundancy design in infrastructure systems using the branch-and-bound algorithm for reliability analysis of general coherent systems	PROF. BYUN, Ji-eun (University Of Glasgow)
14:50	Numerical modeling of wear on forming dies in high-volume metallic bipolar plate production for fuel cells	MR. LEE, Sangwook (Fraunhofer Institute For Production Technology Ipt)
15:10	Factory-X : The Digital Ecosystem for Factory Outfitters and Operators	DR. RO, Seonhi (Labs Network Industrie 4.0 E.v.)

### [MA8] (Round Table) What is the Role of ICT in Advanced Smart Mobility?

**16:00-17:40 @ OC1.07 Chair : DR. SON, Min, Universität der Bundeswehr München  
PROF. YANG, Changho, Oxford Brookes University**

Time	Title	Presenter
<p>This session explores the role of Information and Communication Technology (ICT) in advancing smart mobility. As urban areas evolve, ICT is crucial for enhancing connectivity, efficiency, and accessibility in transportation. Discussions will focus on the integration of technologies like IoT, big data analytics, autonomous vehicles, and the infrastructure supporting them. The session will cover the historical development of smart mobility, essential ICT components, the impact on Terrestrial / Urban Air Mobility (UAM), and the infrastructure developments driving smart mobility forward. Key Discussion Points: ICT's Impact on Terrestrial Mobility and Urban Air Mobility: Network connectivity, sensors, ADAS, navigation, vehicle communication. Infrastructure for Smart Mobility and Smart City: Safety and regulations, digital platform, intelligent transport system, and traffic management. Case Studies: Singapore, the Netherlands, and South Korea. Challenges in Smart Mobility: Data privacy, security, standardization, and inclusivity. Future Directions: Innovations and potential developments in smart urban transportation</p>		
16:00	Digital Transformation of Mobility	PROF. KIM, Young-hong (Silla University)
16:30	(Break) Introduction of Advanced Mobility Technology Expert Network (AMExNet)	PROF. KIM, Young-hong (Silla University)
16:40 - Round table	PROF. KIM, Young-hong (Silla University)	DR. RO, Seonhi (Labs Network Industrie 4.0 E.v.) MS. JANG, Eunyoung (Humboldt-Universität zu Berlin) DR. CHEONG, Jaesook (Universität Bayreuth)

**[MO] - MARINE AND OCEAN ENGINEERING**
**[MO] - MARINE AND OCEAN ENGINEERING**

DR. JEONG, Byongug  
DR. YUM, Kevin Koosup

University of Strathclyde  
HD Hyundai Europe R&D Center

The Marine and Ocean Group at EKC 2024 continues its endeavor of fostering a dynamic environment where academics, professionals, and industry experts come together to address some of the most pressing contemporary challenges in marine and oceanic realms. Building on the momentum from previous EKCs, our forthcoming conference is poised to further the conversation around innovations and policies shaping a sustainable future for the maritime sectors.

This year, we extend a cordial invitation to groundbreaking research that paves the way for advancements in maritime decarbonisation and digitalisation. We are also setting the stage for rigorous debates on evolving policy and international regulatory frameworks.

Expanding upon the previous scope, EKC 2024 intends to incorporate a holistic view that includes the pursuit of zero-emission strategies, advancements in autonomous marine operations, and the evaluation of cutting-edge technologies' practicality. A special emphasis for this edition is the commitment to harnessing the transformative power of digital technologies and decarbonization processes.

We greatly value and await your active participation in our sessions, which promise to be a confluence of thought leaders from various sectors, including, but not limited to, academia, industry, government, and professional societies from Europe and Korea. Your insights and contributions are vital to catalyzing progress and driving forward our shared vision for a resilient and sustainable marine and ocean industry.

**Wednesday, 31st July, 2024**
**[MO1] SNAK-EKMOA Joint Sessions(Hydrogen)**

**09:00 - 10:40 @ OC1.06** Chairs : MR. KIM, Joongwon, University of Strathclyde  
PROF. LEE, Jaeyong, Dong-eui University

Time	Title	Presenter
09:10	Digital Healthcare Engineering for Enhancing Safety and Sustainability in Maritime Operations	PROF. PAIK, Jeom-kee (University College London)
09:35	Carbon Reduction Technologies in Offshore manufacturing and impact on marine ecosystem	MISS. NAIR, Shraddha (Youngo)
10:00	Next-Gen Cooling Solutions for Green Ships: 3-D Numerical Investigation of Nano-Fluids in PEM Fuel Cell Stack	PROF. JEONG, Se-min (Chosun University)
10:20	Performance Evaluation of Hydrogen Fuel Cell for Ship	PROF. JUNG, Kwanghyo (Pusan National Univerity)

**[MO2] LR-EKMOA Joint Session (Maritime Safety in Novel Design)**

**11:00-12:40 @ OC1.06** Chairs : DR. LEE, Yongwon, Lloyd's Register  
MR. KIM, Se-jun, Lloyd's Register

Time	Title	Presenter
11:00	Towards a Safer and Sustainable World	DR. LEE, Yongwon (Lloyd's Register)
11:15	Future Fuels in Shipping & the Importance of the Human Factor	MR. WILLSSHER, Christofer (Lloyd's Register)
11:40	Solid Oxide Fuel Cell Development for Large Commercial Vessels	DR. YUM, Kevin Koosup (HD Hyundai Europe R&D Center)
12:00	Recent Issues and Comprehensive Efforts in IMO for the Maritime Safety	DR. KIM, Mingyu (Korea Maritime Cooperation Center)
12:20	Operational Guidance for Worldwide Carriage of Containers	DR. LEE, Yongwon (Lloyd's Register)



**[MO] - MARINE AND OCEAN ENGINEERING**
**Thursday, 1st August, 2024**
**[MO3] KRISO-EKMOA Joint Session: Advanced Marine Mobility**

**09:00 - 10:40 @ OC1.06**      **Chairs : PROF. KIM, Hyungju, Norwegian University of Science and Technology**  
**DR. KANG, Seong-gil, Korea Research Insititute of Ships and Ocean Engineering**

Time	Title	Presenter
09:00	MOL Group Decarbonising activities	DR. GREEN, Alex (Mol Group)
09:20	Research and Development of Insulation System for Liquid Hydrogen Fuel Tank by KRISO	DR. KIM, Gun Woo (Korea Research Institute Of Ships And Ocean Engineering)
09:40	KRISO's Efforts in Technology Development and IMO Affairs for Onboard Carbon Capture	DR. LEE, Seong-yeob (Korea Research Institute of Ships & Ocean Engineering)
10:00	Plans for Establishment of KRISO Europe Office and Implementation of a Workforce Training Program for Advanced Maritime Mobilities	DR. HONG, Sup (Korea Research Institute of Ships & Ocean Engineering)
10:20	Numerical prediction of cavitation erosion risk on ship propellers	DR. SHIN, Keun Woo (Man Energy Solutions)

**[MO4] KMC-EKMOA Joint Session\_Achieving zero carbon emissions in the maritime sector**

**11:00-12:40 @ OC1.06**      **Chairs : DR. JANG, Hayoung, University of Strathclyde**  
**DR. KIM, Mingyu, Korea Maritime Cooperation Center**

Time	Title	Presenter
11:00	Enhancing Maritime Sustainability through Circular Economy Metrics	MR. OKUMUS, Dogancan (University of Strathclyde)
11:20	CFD Simulation of a Pivoted Wave Energy Converter Integrated with a Vertical Wall	MR. YANG, Injun (University of Strathclyde)
11:40	Global Infrastructure for Biofuels and Commercialization Challenges in the Maritime Sector	DR. HWANG, Daejung (Korea Maritime Cooperation Center)
12:00	Safety Evaluation on Ammonia-Fueled Ship: Gas Dispersion Analysis through Vent Mast	DR. JANG, Hayoung (University of Strathclyde)
12:20	Pre-dimension study of a tripod shaped support structure for offshore wind turbines using particle swarm optimization	MR. LEE, Jaseung (Chalmers University of Technology)

## Thursday, 1st August, 2024

### [MO5] EKMOA-HD ERC Joint Session: Ocean Transformation – Mobility, Wise, Life and Energy

14:00-15:40 @ OC1.06 Chair : DR. KISTNER, Lukas, HD Hyundai Europe Research & Development Center GmbH

Time	Title	Presenter
14:00	Simulator approach to evaluate future marine power plant configurations aligned with alternative fuels	DR. MALEKI BAGHERABADI, Kamyar (Research Scientist Sintef Ocean)
14:20	Challenges of assessing multi-component powertrains in the early design phase	DR. KISTNER, Lukas (Hd Hyundai Europe R&D Center)
14:40	Offshore CALM Buoy Structural Analysis and Design	MR. KIM, Jaekyun (Lr)
15:00	Study on Interactions and Safety Challenges in Zero-Emission Transportation Systems	MR. LEE, Donghun (Ntnu)
15:20	Materials Engineering for aqueous energy storage system	DR. CHEONG, Jun Young (University Of Glasgow)

### [MO6] EKMOA-KOMERI Session

(Alternative Marine Fuels and Zero-Carbon Shipping Technologies in the Shipping Sector) (Tentative)

16:00-17:40 @ OC1.06 Chairs : DR. YANG, Injun, University of Strathclyde  
DR. CHOI, Sungyoon, Korea Marine Equipment Research Institute

Time	Title	Presenter
16:00	Research and development of de-carbonisation fuel application for waterborne transport	PROF. ZHOU, Peilin (University of Strathclyde)
16:20	Development of a high efficient electric generation system	DR. CHOI, Sungyoon (Komeri)
16:40	Extreme Wave Estimation Method for Floating Offshore Wind Power System Design in Ulsan, Korea	DR. LEE, Kanghee (Korea Marine Equipment Research Institute)
17:00	The Permanent Service for Mean Sea Level's (PSMSL) global mean sea level dataset	MISS. KIM, Chanmi (National Oceanography Centre)
17:20	Energy Transition: Innovation and Challenge for Floating Offshore Wind	DR. SHIN, Yun Sup (KSSEA)

## [WS] - WOMEN IN STEMM

### [WS] - WOMEN IN STEMM

DR. RO, Seonhi

Labs Network Industrie 4.0 e.V. / Ford Werke GmbH

The world is undergoing a rapid tech revolution phase marked by the integration of digital technologies, the Internet of Things, artificial intelligence and a focus on circular economy and sustainability. Simultaneously, we face challenges such as cybersecurity, food security, and climate change. The role of women in this era is evolving rapidly, and their contributions are increasingly crucial to shaping the future of technology and innovation. Therefore, women in Science, Technology, Engineering, Mathematics and Medicine (STEMM) now have numerous opportunities, adopting a holistic approach that connects different ecosystems in this changing landscape.

This session aims to explore and promote collaboration between Korean and European researchers and professionals in STEMM fields, with a specific focus on empowering women. We believe that a profound comprehension of the educational and professional cultures in both Korea and Europe has the potential to catalyze and encourage women-led international collaboration. By gaining insights into the nuances of how education and professional environments function in these regions, women in STEMM can leverage this knowledge to build effective partnerships and foster an environment conducive to their successful career development.

**Tuesday, 30th July, 2024**

#### [WS1] (Roundtable) Women Leaders and Cross-cultural Collaboration: Overcoming Obstacles and Leveraging Diversity for Shared Achievement

**09:00 - 10:40 @ OC0.04 Chair : DR. CHO, Hyong Sil, Euro-Korean Women Scientists and Engineers Association**

Time	Title	Presenter
09:00	The 20-Year Journey of KOFWST towards Gender Diversity in Korea's Science and Technology	PROF. KWON, Oh Nam (KOFWST)
09:30	Breaking Barriers: The Impact of Women Leaders in Academia, Politics, and Industry	DR. MIN, Byungjoo (Korea Institute for Advancement of Technology)
09:40	Contribution of Women Leaders in Shaping the Landscape of Research and Innovation Across Europe	MS. RATSO, Signe (DG Research & Innovation, European Commission)
09:50	Crafting Success by Collaboration	DR. KWON, Minchul (The Janssen Pharmaceutical Companies of Johnson)
09:55	Wings of Change: Collaborating with Women Colleagues	MR. HWANG, Jason (Netherlands Aerospace Centre)
10:00	Ups and Downs: A Beginner's Story	PROF. KIM, Boram (Institut National des Sciences Appliquées de Lyon)
10:05	Roundtable Discussion	DR. ALL PANNELISTS, And Audience

**Tuesday, 30th July, 2024**

**[WS2] Empowering Women-led Collaboration in STEMM:  
A Comparative Exploration of Working and Educational Cultures in Korea and Europe**

**11:00 - 12:40****@ OC0.04**
**Chairs : PROF. JUNG, Eunok, Konkuk University  
DR. RO, Seonhi, Ford Werke GmbH**

Time	Title	Presenter
11:00	Introduction of KOFWST	PROF. KWON , Oh Nam (President of KOFWST)
11:05	Introduction of EKWSEA	DR. CHO , Hyong Sil (President of EKWSEA)
11:10	Introduction VeKNI women	DR. RO, Seonhi (Labs Network Industrie 4.0 Association/ Ford)
11:15	Analysis of Changes in Research Activities of Female Scientists and Engineers in Korea's STEM Fields and the Leakage Phenomenon in Industries	PROF. KIM, Mihye (Chungbuk National University)
11:30	Working on the bacteria that can help with two of the most vital global issues	DR. HONG, Hee Jeon (Oxford Brookes University, UK)
11:45	How do pedagogical models play a role as boundary objects?	MISS. KIM, Minjoo (Institut Polytechnique De Paris (ip Paris))
12:00	Educational and vocational perspectives of Women labour in Europe in comparison to the South Korea (in general and STEM)	DR. BRINGS, Christin (Vdivdeit Berlin)
12:15	Panel discussion: Educational and Working Cultures in the different EU countries and Korea : Dr. Kyung Min Lee (Finland), Prof. Mihye Kim (Korea), Prof. Hee-JeonHong (UK), Dr. Christin Brings (Germany)	



# POSTER SESSION

Date / Time: 2024-07-30 16:20 -- 18:00, Room: OC0.02.

## Programm Committee:

DR. KIM, Hansung, University of Southampton / DR. AHN, Sung Il, American Bureau of Shipping (ABS)

Session	Registered Name	Organisation	Title
BEED	SO, Sungil	TU Dortmund University	[PBE001]Industrial Heritage in Berlin: Exploring Preservation, Use, and Neglect
BEED	KIM, Yoonsoo	Kunst + Herbert	[PBE002]Falkenriedterrassen and Gröningerhof
BEED	KIM, Sung-yong	TU Bergakademie Freiberg	[PBE003]Rationalization of Building in 1920s
BS	WOO, Seonock	Korea Institute of Ocean Science and Technology	[PBS001]Coral and microbial interactions for larval settlement and growth
BS	SONG, Juhee	Vrije Universiteit Brussel	[PBS002]DNN-based identification of additional b jets for a differential ttbb cross section measurement
BS	JEON, Seongmin	EPFL	[PBS003]Cobalt-catalyzed enantioselective and enantioswitchable reductive cyclopropanation
BS	LEE, Youngro	Swiss Federal Institute of Technology in Lausanne (EPFL)	[PBS004]Resistivity anomaly in ferromagnetic metal
BS	HA, Eason	Seoul Foreign School	[PBS005]Counter-Intuitive Chaotic Behaviors in n-body Pendulums
CM	SONG, Hyeong Yong	Karlsruhe Institute of Technology	[PCM001]Rheo-dielectric study for isothermal crystallization of poly(butylene succinate) (PBS)
CM	LEE, Juho	University of Ulsan	[PCM002]Development of Shock-Resistant Testing Environments for Secondary Battery Packs
CM	LEE, Inpyo	Kyungpook National University	[PCM003]Enhanced performance of CIGS solar cell with the Ag network electrodes
CM	YE, Sungwook	Kyungpook National University	[PCM004]Enhanced Thermoelectric and Mechanical Performances in Bi0.4Sb1.6Te3 via embedding defective TiO2 nanoparticle
CM	PARK, Jungmin	Kyungpook National University	[PCM005]Enhanced Thermoelectric Properties of BiSbTe by the decoration of ZnS Nanoparticles
CM	KIM, Seunggi	University of Louvain	[PCM006]Microstructure and Electrochemical Property of a Composite Cathode Tailored using Nd(Ba,Ca)Co2O5+ $\delta$ Double Perovskite Nanoparticles
CM	LIM, Hyunjung	Fraunhofer IWKS	[PCM007]Microwave-assisted Regeneration of Li-ion Battery Cathode Active Material by Deep Eutectic Solvents
CM	CHOI, Jaehoon	Karlsruhe Institute of Technology	[PCM008]Modifying MoS2 nanoconfinement geometry and chemistry by interlayer pillaring for pseudocapacitive ion intercalation hosts
CM	YANG, Hanna	University of Louvain	[PCM009]Microstructural Engineering of Thermally H-gas charging and electrochemical H-charging of 316L stainless steel
CM	CHOI, Eunhye	Delft University of Technology	[PCM010]Effect of Porous Cathode Catalyst Layer on Proton Exchange Membrane (PEM) Toluene Hydrogenation
EI	SUNG, Baeckkyoung	KIST Europe	[PE001]Mobile Virtual Brain: A new perspective in bioelectric digital health
EI	HONG, Eunyoung	Imperial College London	[PE002]Strain-Induced $\alpha$ -phase stabilisation for low dark current FAPV-based photodetectors
EI	MOON, Bokyoung	Inje University	[PE003]Digital Therapeutic for Early Intervention in Dyslexia in Early School Age Children
EI	KIM, Boram	Chungbuk National University	[PE004]Digital Therapy for Intermittent Explosive Disorder
EI	GEUM, Donghyun	INJE UNIVERSITY	[PE005]Rhythm-based serious game for hand function improvement
EI	HWANG, Jeonghyun	Seoul National University of Science and Technology	[PE006]Analysis Of The Changes in Reflectivity According To Temperature And Wavelength For A Multilayer Thin Film Coated With Gold With Different Thickness
EI	LEE, Seonju	Chungbuk National University	[PE007]Medical Posture Correction Game for Disk Prevention and Patients
EI	NAM, Du Hyeon	Dongseo University	[PE008]A game based on facial muscle enhancement in middle-aged patients with peripheral facial nerve paralysis
EI	NOH, Jaehyun	Seoul National University of Science and Technology	[PE009]TCAD Simulation of Modified Poly-Gate Separated Schottky Barrier Diode in CMOS
EI	CHEON, Donghyeon	Kyeongpook National University	[PE010]Optimisation of the Annual Energy Production of a Real-life Onshore Wind Farm using in South Korea
EI	JANG, Inhoon	Hankyong National University	[PE011]A Method for Sorting Onion Quality using Contrastive Learning with Triplet Loss Augmented by Cosine Similarity
EI	NA, Donggyu	Chungbuk National University	[PE012]Visual perception training game for intellectual disability
EI	LEE, Minhyeok	Chunbuk National University	[PE013]Comparative Analysis of Real-Time Edge Detection Algorithms on FPGA Platforms



Date / Time: 2024-07-30 16:20 -- 18:00, Room: OC0.02.

Session	Registered Name	Organisation	Title
EI	KIM, Hyeonsik	Korea Institute of Industrial Technology	[PE014]Evaluation of HfxZr1-xO2 Thin Film Crystallization Via Excimer Laser Annealing(ELA)
EI	HWANG, Junghwan	Chungbuk National University	[PE015]Low-area 10bit OLED Source Driver IC using R-DAC, SI-SC DAC, and SC-AMP
EI	MOON, Juhoon	Chungbuk National University	[PE016]A 3-Bit Self-Rectifying Resistive Memory Physics-based Compact Model for Crossbar Array Applications
EI	CHOI, Kangwoo	Chungbuk National University	[PE017]A 12-bit triple-mode phase accumulator for 100~10MHz direct digital synthesizers
EI	GARAM, Han	Wageningen University	[PE018]Plant Disease Detection with Generative Adversarial Networks
EI	JEONG, Jae Chan	ETRI	[PE019]Comparative Analysis of Enameled and Litz Wire Coils using FMMD for Quantifying SPIONs
EI	SEONG, Min-seok	K-water(Korea Water Resources Corporation)	[PE020]Analysis of Chemical Input Amount Prediction Model Using Preverification System
EI	CHOI, Hyeunseok	KITECH	[PE021]Development of sensors and detection technologies for determining food freshness and safety
EI	LEE, Sunyoung	Entrust Microgrid	[PE022]Application of Unsupervised Learning in Implementation of Joint Power and Index Modulation Access in V2X Systems
EE	KIM, Kyeongmi	KIST EUROPE	[PEE001]Development of Aqueous Electrolytes through the Synthesis of Novel Ionic Liquids
EE	KIM, Moojoon	Fire Insurers Laboratories of Korea, FILK	[PEE002]Cooling experiment and performance review to prevent thermal runaway transfer of ESS equipped with pouch-type LIB
EE	KIM, Seulgi	Chungbuk National University	[PEE003]Enhancing the Stability in Aqueous Zn-Ion Batteries: Insights into NH4V4O10-Ti3C2Tx MXene/Carbon Nanofiber Composite
EE	LIM, Seong-rin	Kangwon National University	[PEE004]Life Cycle CO2 Assessment of Mono-crystalline Photovoltaic Panels
EE	KANG, Sae Byul	Korea Institute Energy Research	[PEE005]Hydrogen-LPG Co-firing Research in 20 kW Domestic Boiler
EE	KIM, Narim	Seoul National University of Science and Technology	[PEE006]Triboelectric nanogenerator with multi-sliding system through rotational motion and maximizing power density
EE	KIM, Dong-hoon	Inha University	[PEE007]Continuous Ammonia Fermentation of Organic Solid Wastes
EE	LEE, Changjong	Chungnam National University	[PEE008]A study on the performance of lithium-ion batteries according to altitude
EE	SONG, Dayeong	Daejeon Sejong Research Institute	[PEE009]Policy and Strategy to Achieve Carbon Neutrality in Daejeon and Role of Daejeon Carbon Neutrality Center
EE	CHA, Misun	Daejeon Sejong Research Institute	[PEE010]Basic Plan for Carbon Neutrality and Green Growth to Achieve 2030 NDC Goals in Daejeon City
EE	KIM, Chuljung	Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW)	[PEE011]Accelerating Battery Innovation: Advanced Electrochemical Analysis with 3D Printing.
EE	KIM, Seohyun	Seoul National University	[PEE012]Investigation on Removal Efficiencies of PFAS at Low Concentration using Reverse Osmosis with Varying Feed Pressures
EE	CHOI, Yejung	SINTEF	[PEE013]Electrochemical Hydrogen Technology Research in SINTEF
EE	LEE, Ung	KIST	[PEE014]The green-ol economy
EE	KWON, Eunseok	University of Strathclyde	[PEE015]A study to raise awareness of energy literacy: to what extent are international students in the UK knowledgeable of energy literacy?
EE	KIM, Yi-seul	Pusan National University	[PEE016]Multiphysics Simulation of PEM Fuel Cell Dynamic Response with Rotational Motion: Heat and Mass Transfer in Straight-Parallel and Serpentine Flow Channels
EE	HONG, Eunbi	Seoul National University of Science and Technology	[PEE017]Ultrasonic Field Assisted Nano Porosity Control for The High-Performance Hydrogen Evolution Reaction in Alkaline Water Electrolysis
EE	BAIK, Seungyun	KIST Europe	[PEE018]Quantification of selected emerging contaminants in water-soluble fractions of urban collected fine particulate matter (PM2.5)
EE	JEONG, Da-woon	Korea Institute of Industrial Technology (KITECH)	[PEE019]Selective Lithium Ion Extraction for High-Purity Lithium Phosphate Using Ceramic Membrane Technology
EE	KWON, Yongbum	Korea Institute of Industrial Technology	[PEE020]New Paradigm on Waste-to-Energy Applying Hydrovoltaic Energy Generation with Discarded Face Masks

Date / Time: 2024-07-30 16:20 -- 18:00, Room: OC0.02.

Session	Registered Name	Organisation	Title
EE	KIM, Geunsu	University of Glasgow	[PEE021]Impact Chain Analysis of Climate Change Risks in Thua Thien Hue Province, Vietnam
LH	HEO, Danhui	Albert Szent-Györgyi Medical School, University of Szeged	[PLH001]Impact of Portal/Superior Mesenteric Vein Abutment Angle on Prognosis in Resectable Pancreatic Cancer
LH	KANG, Sujin	Imperial College London	[PLH002]Organ-Specific Biological Aging and Cognitive Changes: Implications for Neurodegenerative Disease Risk
LH	KANG, U-seok	Chungbuk National University	[PLH003]Alzheimer's Prevention Mobile Game App using AI and Self-Reflection
LH	SUNG, Baeckkyoung	KIST Europe	[PLH004]Investigation of insulin delivery characteristics in needle-free jet injectors: A computational study
LH	RYU, Raejeong	Ghent University & KU Leuven	[PLH005]Modeling the growth and volatile metabolite production of <i>Brochothrix thermosphacta</i> under modified atmospheres.
LH	KIM, Nam Yim	Konju National University in Korea	[PLH006]The Effects of Wearing Tight-Fitting Pants on Knee Rotation Angle when Walking in People with Genu Varum
LH	KIM, Hayoung	Soonchunhyang University	[PLH007]A Serious Game for Dementia Prevention: Cognitive Training with Arithmetic and Physical Exercise
LH	JANG, A-young	UiT Norges arktiske universitet	[PLH008]Estimating MIC-values using survival analysis
LH	KIM, So Hyung	Flemish Institute of Biotechnology (VIB) - Plant Systems Biology	[PLH009]Microspore EmbryoGENESIS: an innovative tool to accelerate breeding cycle of crops with high efficiency
LH	LEE, Yeaseul	Modélisation et Simulation Multi Echelle (MSME)	[PLH010]Microstructural modeling and simulation of endometriosis biomechanics in 2D using histological analysis
LH	KIM, Soyeon	UGent	[PLH011]Pathogenicity assessment for emetic <i>Bacillus cereus</i> isolated from food using cytotoxicity and gene expression assays
LH	HUH, Minji	Nestlé Research / UNIL	[PLH012]In vivo screening using zebrafish for a novel Tfeb activator: Implications for muscle health and aging
LH	KIM, Hyuntae	Max Planck Institute of Biophysics	[PLH013]Neighbor List Artifacts in Molecular Dynamics Simulations
LH	CHOI, Sun	Semmelweis University	[PLH014]Hepatocellular carcinoma
LH	OH, Dayoung	Ziphius Vaccines	[PLH015]Differential infection behavior of African swine fever virus (ASFV) genotype I and II in the upper respiratory tract
LH	LEE, Jeongmin	Korea Institute of Science and Technology & Korea University	[PLH016]Dissecting tracrRNA Scaffolds: Key Insights into CRISPR/Cas9 Functionality
MA	LIM, Jaeyun	Seoul National University of Science and Technology	[PMA001]Genetic Algorithm-Driven Optimization of Noise Barrier Based on Helmholtz Resonator
MA	KIM, Moosun	Korea Railroad Research Institute	[PMA002]Study on Additive manufacturing process to embed sensors in metal structure
MA	CHOI, Seungyeong	University of Oxford	[PMA003]Effective Thermal Management of Rotor-Stator Systems using Local Heat Transfer Measurements and Machine Learning
MA	PARK, Sanghun	Seoul National University of Science and Technology	[PMA004]Acoustic Meta-box for Broadband and Low-frequency Sound with Porous Material
MA	CHOI, Junyong	Seoul National University of Science and Technology	[PMA005]Transparent Hydrogel Matrix System Using PAAm/NaAlg GPMs Hydrogel
MA	KIM, Bokyoung	Seoul National University of Science and Technology	[PMA006]CCFR honeycomb structure under cyclic load
MA	CHOI, Jung Mee	Taltech	[PMA007]4-Wheel Autonomous Driving Robot with a Novel Curb-Climbing Ability and Improved Cruising Stability over 6-Wheelers
MA	SON, Junghun	Chungnam National University	[PMA008]Challenges in Improving Upper Stage Engines: Methane, ED Nozzle, and Electric Pump-fed Cycle
MA	CHUNG, Jaewook	Algrades OÜ / Taltech	[PMA009]Conceptual Design of Ceiling Tethered Drone for Indoor Warehouse Management with 2D-Controller Model
MA	SON, Min	Universität der Bundeswehr München	[PMA010]Dynamic Spectral Analysis of Transcritical Sprays
MO	CHOE, Sujeong	NATIONAL KOREA MARITIME AND OCEAN UNIVERSITY	[PMO001]Numerical Study on Gas Dispersion Analysis Based on Risk Assessment for the Development of a 700HP LPG-Fueled Coastal Vessel
MO	INSIK HWANG, Insik	University of Strathclyde	[PMO002]Establishing Safety Zones for Ammonia Bunkering Operations: A Quantitative Risk Assessment
MO	NAM, Seol	University of Strathclyde, Pusan National University	[PMO003]Seakeeping Performance of Small Vessels Using CFD-Modified Potential(CMP) Simulation

Date / Time: 2024-07-30 16:20 -- 18:00, Room: OC0.02.

Session	Registered Name	Organisation	Title
MO	KIM, Jeongkuk	NATIONAL KOREA MARITIME AND OCEAN UNIVERSITY	[PMO004]Ammonia-Based Fuel Cell Hybrid Ships: Integrated Performance Test Results
MO	JEONG, Seok Chan	Dong-eui University	[PMO005]Research on Cloud-Based Cargo Management System and Optimal Stowage Plans for Vehicle Carriers
MO	JUNG, Yong-dae	Pusan National University	[PMO006]Numerical Evaluation on Thermal Performance of Insulation System for Type C LNG Fuel Tank and BOG/BOR Estimation by Filling Level
MO	KIM, Kwangseung	University of Strathclyde	[PMO007]Evaluating the Safety of Ammonia Operation in Offshore units: CFD Modeling and Evacuation Planning
MO	최, 윤	University of Strathclyde	[PMO008]A novel AI-powered autonomous risk assessment model
MO	JEONG, Byongug	University of Strathclyde	[PMO009]Introduction of Innovation Trend for Digital Transformation in Steel Outfitting Design of Ship
MO	JEONG, Byongug	University of Strathclyde	[PMO010]Study on Optimal Route Design for Rotor Sail Type WAPS and Operational Efficiency Using Numerical Analysis
ST	CHO, Su A	University of Strathclyde	[PST001]Managing Sustainability in the Digital Age: The Intersection of ESG (Environmental, Social, and Governance) and Business Technology
ST	YUN, Solji	University of Strathclyde	[PST002]Metaverse and Music Artists: Creating Authentic Connections and Fan Loyalty
ST	PARK, Narae	University of Oslo	[PST003]Investigating linguistic bias in large language models: A case study of Korean text generation



# INDUSTRY FORUM

## Wednesday, 31st July, 2024

### [IF1] AI

**09:00 - 10:40**

**@ OC0.01**

**Chair : DR. LEE, Jaemin, University of Leeds**

#### Synopsis

Artificial intelligence (AI) and industry focus in Korea and UK/EU.

We open discussions on AI technology and the role of stakeholders in various industries/countries. The topics include (1) the current technology and potential for our future, (2) the responsibility in AI technology, (3) applications, (4) strategies for sustainable economy.

[09:00 - 09:10] DR. LEE, Jaemin (University of Leeds)

Title: Greetings

[09:10 - 09:25] MR. NEEDHAM, Chris (Innovate UK)

Title :TBA

[09:25 - 09:40] PROF. YOO, Chuck (Korea University)

Title: Opportunity for Industry Cooperation and Global R&D

[09:40 - 09:55] DR. ALI, Sharib (University of Leeds)

Title: Innovations and Challenges in AI-Driven Medical Image Analysis

[09:55 - 10:10] MR. LEE, Dongyun (EntreReality)

Title: TBA

[10:10 - 10:25] DR. LEE, Myonghwa (Science and Technology Policy Institute)

Title: AI Policy Trends and Key Implications in Korea

[10:25 - 10:40]

Panel Discussion with all the speakers and MR. PARK, Youngo (Samsung Electronics)

### [IF2] Manufacturing, Move Forward

**11:00-12:40**

**@ OC0.01**

**Chair : DR. LEE, Sangmok, Korea Institute of Industrial Technology**

#### Synopsis

1. Industry-focused: Major trends and issues, ideas for collaborative projects, key themes for major sectors and regions.
2. Government-focused: Global R&D collaboration and venture building for key trends, policy and high-impact programs, sector issues.
3. Investor and academia-focused: Global collaboration (technology, supply chain, investment, etc.), key trends, best practices, and exploration project ideas.

[11:00 - 11:10] Greeting (KITECH, KIAT)

[11:10 - 11:20] DR. LEE, Sangmok (Korea Institute of Industrial Technology)

Title: Roadmap of Manufacturing

[11:20 - 11:30] DR. KIM, Min Sun (Korea Institute of Industrial Technology)

Title: Research Overview of the KITECH for Implementing Value Manufacturing

[11:30 - 11:45] DR. GARCIA, Enrique (National Composites Centre)

Title: NCC - The Impact of Digital Engineering in Future Composites Manufacturing

[11:45 - 12:00] DR. BLOK, Lourens (Lineat Composites)

Title: Forming the Future of High-Performance Sustainable Composites with Recycled Carbon Fibre Alignment Technology

[12:00 - 12:15] DR. JANSSEN, Henning (Fraunhofer Institute for Production Technology IPT)

Title: Cross-Industry Innovation in Manufacturing

[12:15 - 12:40]

Panel Discussion

## Wednesday, 31st July, 2024

### [IF3] Deeptech

16:20-18:00

@ OC0.01

Chair : DR. YOO, Kwangkyu (alex), Deep.Meta

#### Synopsis

Development of a Deep-Tech Ecosystem between Korea and the UK/EU.

We open discussions on: 1) developing deep tech in different organizations, such as industry, academia, and government, and 2) establishing sustainable collaboration between them. This will include three primary themes:

- Industry-focused: State-of-the-art deep tech development in manufacturing and the AI-tech industry.
- Government-focused: Policy and research strategy to enrich global networks in deep tech.
- Academia-focused: Industry-friendly education programs with case studies in world-leading universities.

[16:20 - 16:35] DR. PILGRIM, Christopher (Innovate UK)  
Title: TBA

[16:35 - 16:50] DR. CHO, Yongrae (Science and Technology Diplomacy & Security Research (STEPI))  
Title: Recent policy trends in South Korean government to foster and promote DeepTech industrial ecosystem

[16:50 - 17:05] DR. OMOIGIADE, Osas (Deep.Meta)  
Title: TBA

[17:05 - 17:20] DR. YUM, Kevin Koosup (HD Hyundai Europe R&D Center)  
Title: TBA

[17:20 - 17:35] DR. MORSE, Llewellyn (University College London)  
Title: Developing Industry-Ready Engineers: Our Approach with Machine Learning and AI

[17:20 - 17:35] DR. HAMADEH, Lama (University College London)  
Title: Developing Industry-Ready Engineers: Our Approach with Machine Learning and AI

[17:35 - 17:50] DR. KANGWOO, Lee (Korea Evaluation Institute of Industrial Technology (KEIT)), Title: TBA

## Thursday, 1st August, 2024

### [IF4] (WMG) Innovative Research and Industrial Collaboration with WMG I

14:00-15:40

@ OC0.01

Chair : DR. PARK, Young Saeng, University of Warwick

#### Synopsis

WMG is one of the largest academic departments at the University of Warwick and a global leader in innovative research and industrial collaboration. WMG conducts cutting-edge research in various fields such as advanced manufacturing technology, automation systems, battery materials and cells, intelligent vehicles, supply chains, energy applications, cybersecurity, data analytics, etc. The department's focus on applied research, characterized by close collaboration between industry and academia, aims to solve real-world problems effectively.

WMG's research strengthens industrial competitiveness and promotes sustainable development through innovative manufacturing processes and technological advancements. For example, WMG leverages data and digital technologies to lay the foundation for future smart factories and automation systems. Their research activities achieve tangible results through partnerships with global companies and ensure that research results can be applied to actual industrial settings.

This session will provide an overview of WMG's overall research theme structure and introduce the activities of several selected research groups. Based on this, it aims to create a new chapter for discussing collaboration opportunities with various research institutions. By combining the expertise of these institutions with WMG's research capabilities, it hopes to explore ways to achieve more innovative research outcomes. Such discussions will play a crucial role in expanding opportunities for mutual cooperation and developing concrete strategies to achieve shared goals.

[14:00 - 14:20] DR. KEATING, Elspeth M (CTO Team, WMG, University of Warwick), Title: An Overview of WMG, the Catapult Centre, WMG's Theme Structure and Research Groups' Structure

[14:20 - 14:40] PROF. HARRISON, Robert (Automation Systems Group, WMG, University of Warwick), Title: Group Projects and Activities related to Automation Systems in Manufacturing

[14:40 - 15:00] PROF. DONZELL, Valentina (Intelligent Vehicles Sensors Group, WMG, University of Warwick), Title: Group Activities related to Sensing and Perception for Intelligent Vehicles and Automated Systems

[15:00 - 15:20] PROF. PIPER, Louis (Battery Materials and Cells Group, WMG, University of Warwick), Title: Battery Innovation at WMG: Academic Understanding to Drive Industry Solutions

[15:20 - 15:40] PROF. KHASTGIR, Siddhartha (Verification & Validation Group, WMG, University of Warwick), Title: Safety of Automated Driving

### [IF5] (WMG) Innovative Research and Industrial Collaboration with WMG II

16:00-17:40

@ OC0.01

Chair : DR. PARK, Young Saeng, University of Warwick

[16:00 - 16:20] PROF. MONTANA, Giovanni (Data Science Group, WMG, University of Warwick)  
Title: Group Projects and Activities related to Data Science

[16:20 - 16:40] DR. BALAKRISHNAN, Kogi (Supply Chain Group, WMG, University of Warwick)  
Title: Policy Framework for Mapping a Transparent and Ethical Supply Chain for Electric Vehicles : UK - ROK Research Collaboration

[16:40 - 17:00] MR. NICOL, David (SME Team and Deans Office / Research Office, WMG, University of Warwick)  
Title: WMG SME Team (Catapult) – International Research Collaboration development

[17:00 - 17:20] PROF. DAVIS, Claire (Advanced Steel Research Centre, WMG, University of Warwick)  
Title: Sustainable Steel Manufacturing



# **SPECIAL TOPICS**

**Tuesday, 30th July, 2024**

**[ST1] Science Communication for Improving Public Science Literacy**

**09:00 - 10:40 @ OC1.01 Chair: DR. LEE, Seung-hun, Seoul National University**

**Speakers**

[09:00 - 09:10] DR. LEE, Seung-hun (Seoul National University)  
Title: The Age of Science Capital - Introducing the UK's Science Capital over Coffee

[09:10 - 09:35] PROF. CHO, Sook-kyoung (Korea Institute of Energy Technology (KENTECH))  
Title: The Light and Shadow of Science Communication in Korea

[09:35 - 09:55] DR. KIM, Minjae (University of Warwick)  
Title: Importance of scientific communication in impactful scientific articles

[09:55 - 10:15] PROF. SONG, Jinwoong (Seoul National University)  
Title: Scientific Participation & Action: A Case of

[10:15 - 10:40] Roundtable Discussion

**[ST2] Frontier Research & Career Opportunities through EU, UK & International Grants: Testimonials & Experience-sharing by Korean Grantees & Fellows**

**11:00 - 12:40 @ OC1.01 Chair: DR. KIM, Hyong-ha, KRISS**

**Speakers**

[11:00 - 11:05] DR. KIM, Hyong-ha (Korea Research Institute of Standards and Science (KRISS))  
Title: Frontier Research & Career Opportunities through EU, UK & International Grants: Testimonials & Experience-sharing by Korean Grantees & Fellows

[11:05 - 11:20] DR. CHOI, Hansol (Harvard Medical School & Boston Children's Hospital (HFSP Fellow))  
Title: My journey to HFSP postdoctoral fellowship & embracing the opportunities

[11:20 - 11:35] DR. KIM, Teun-teun (University of Ulsan (Former MSCA Fellow))  
Title: Marie Skłodowska-Curie Fellowship - Experience and Know-hows

[11:35 - 11:55] DR. KWON, Woojin (UNIST & Univ. of Milan (Current ERC Grantee & Former MSCA Fellow))  
Title: My experience as an ERC & MSCA winner

[11:55 - 12:10] DR. KIM, Minchul (IGBMC, (ERC Grantee, 2021 Starting Grant))  
Title: My journey to ERC Starting Grant

[12:10 - 12:25] DR. IM, Hyungsoon (Harvard Medical School (Former HFSP Grantee))  
Title: Fostering interdisciplinary international collaboration through HFSP

[12:25 - 12:40] Q&A

## Tuesday, 30th July, 2024

### [ST3] Frontier Research Opportunities through EU & International Grants & Fellowships: Horizon Europe, ERC, MSCA, HFSP and UK-MRC

**16:20 - 18:00 @ OC1.01 Chair:**

**DR. KIM, Hyong-ha, KRISS**

#### Speakers

[16:00 - 16:00] MS. RATSO, Signe (European Commission, Directorate-General Research & Innovation)

Title: \*Note time: 14:00~16:00 (Opening Ceremony Plenary Talk) EU Horizon Europe: New Research Opportunities under EU Horizon Europe Association

[16:20 - 16:25] DR. KIM, Hyong-ha (KRISS)

Title: Frontier Research Opportunities through EU & International Grants & Fellowships: Horizon Europe, ERC, MSCA, HFSP and UK-MRC

[16:25 - 16:45] DR. LAFORTUNE, Anouk (EU DGEAC (Directorate-General Education, Youth, Sport & Culture))

Title: Talent mobility, training and career development of researchers under the Marie Skłodowska-Curie Actions (MSCA)

[16:45 - 17:05] DR. VAZQUEZ MOLINA, Joan (ERCEA (European Research Council Executive Agency))

Title: ERC Grants

[17:05 - 17:25] DR. BAUER, Guntram (HFSP (Human Frontier Science Program Organization))

Title: HFSP support for international research collaboration in the life sciences

[17:25 - 17:45] DR. PALMER, Mark (UKRI Medical Research Council)

Title: Bilateral research collaboration between UK and Korea

[17:45 - 18:00] Q&A and Closing of Session

### [ST4] International Collaboration for Fostering Frontier Research

**09:00 -- 10:40 @ OC0.03 Chairs:**

**PROF. CHOI, Youngseok Thomas, Kingston University  
DR. HONG, Hee Jeon, Oxford Brookes University**

#### Speakers

[09:00 - 09:15] MS. BAIK, Minjung (National Research Foundation of Korea)

Title: Opening New Horizons: Enhancing Korea-EU Research Collaboration through Horizon Europe

[09:15 - 09:30] MS. BEVAN, Natasha (The Royal Society)

Title: Enhancing International Collaboration: Principles and Approaches to Supporting Equitable Research Partnerships

[09:30 - 09:45] DR. LEE, Jeongwon (Korea-Europe Quantum Science Technology Cooperation Center)

Title: The Importance of International Cooperation and Korea's Policy Efforts to Preempt the Quantum Economy

[09:45 - 10:00] PROF. LEE, Habin (Brunel University London, UK)

Title: Coordinating an International Research Consortium: Experiences from EU Research Funding Programmes

[10:00 - 10:40] Panel discussion with all the speakers

## Tuesday, 30th July, 2024

### [ST5] (closed session) The 10th K-TAG Europe General Meeting

16:20 - 18:20 @ OC0.03 Chair: DR. MIN, Byungjoo, Korea Institute for Advancement of Technology

### [ST6] POSTECH 2.0: Strategic Blueprint for a Better Tomorrow

16:20 - 18:00 @ OC0.04

#### Speakers

[16:20 - 17:00] DR. KIM, Seong Keun (POSTECH)  
Title: Transforming Tomorrow: The Vision and Strategy of POSTECH 2.0

[17:00 - 18:00] PROF. LEE, Jong-Bong (POSTECH)  
Title: Flourishing at POSTECH: A Great Place to Work and Grow

### [ST7] Making an Impact for a Better Future – Appropriate Technology for Inclusive Global Communities 1

11:00 - 12:40 @ OC1.09 Chairs: DR. JUNG, Kangsoo, Inria Paris-Saclay hosted by École Polytechnique  
MS. PARK, Mindy, Global Development Institute

#### Speakers

[11:00 - 11:20] MR. MIN, Noah (Gongsaeng, Inc.)  
Title: Making Impact of Maker Living Lab Project for the socially disadvantaged.

[11:20 - 11:40] MS. YANG, Ji Hye (University of Manchester)  
Title: Enhancement of National Traffic Database and Capacity Building Project in Sri Lanka

[11:40 - 12:00] MS. LEE, Seung-hyun (University of Manchester)  
Title: Unlocking Dynamics of Interdisciplinarity: Identifying Characteristics of Research Disciplines Using the Case of Korean Public Research Institutes

[12:00 - 12:40] DR. KIM, Byoung Yoon (ITER Organization)  
Title: Inclusive Development through Appropriate Technologies: I-DREAM case

### [ST8] (Pohang TechnoPark): R&D Collaborations

18:30 - 19:00 @ OC1.06 Chairs: DR. HWANG, Chulmin, Pohang TechnoPark  
DR. LEE, Yongwon, Lloyd's Register

## Wednesday, 31st July, 2024

### [ST9] (closed session) YGF/YPF Alumni Forum

09:00 - 10:40 @ OC0.01 Chair: DR. LEE, Taisik, Korean Federation of Science and Technology Scientists

### [ST10] (closed session) S&T Leaders Forum - International Research Collaboration

11:00 - 12:40 @ OC0.01 Chair: DR. KIM, Soosam, Korean Federation of Science and Technology Scientists

### [ST11] (STEPI) Exploring Policy Directions for Fostering 'Science and Technology Cooperation' in the CET field.

16:20 - 18:00 @ OC1.02 Chairs: DR. HWANG, Chulmin, Pohang TechnoPark  
DR. JEONG, Byongug, University of Strathclyde

#### Speakers

16:20-16:25

- Opening Remark: ooo, President, Science Technology Policy Institute (STEPI)

16:25-16:55 (30 min presentation, 10 min each)

1. Comparison of Domestic and International Support Systems for Promoting Participation in Horizon Europe within the CET field, Dr. Myong Hwa Lee, Research Fellow, Office of Science and Technology Diplomacy & Security Research, STEPI.
2. National strategic technology in the emerging security era and seeking directions of Korea-Europe cooperation: Focusing on the public sector, Dr. Kyungmo Sung, Head, Office of Science and Technology Diplomacy & Security Research, STEPI.
3. Entering strategy for the European R&D funding landscape, Dr. Migeun Park, Director, Campsie Initiatives.

16:55-17:00 Break

17:00-17:50 Panel Discussion (50 min)

- Moderator: Dr. Jong Hwa Choe, Chief Director, Dept. of Strategic Planning & Management, STEPI
- Panelists 1: Dr. Wonsun Park, Associate Professor, Pusan National University
- Panelists 2: Dr. Woohyun Cho, Director, Korea EU Research Center (KERC)
- Panelists 3: Dr. Cheonin Oh, Principal Researcher, ETRI
- Panelists 4: Dr. Yongrae Cho, Research Fellow, STEPI

### [ST12] (Pohang TechnoPark) Technology Strategy and Collaborations

16:20 - 18:00 @ OC1.06 Chairs: DR. HWANG, Chulmin, Pohang TechnoPark  
DR. JEONG, Byongug, University of Strathclyde

### [ST18] (LG Eenergy Solution)

16:20 - 18:00 @ OC0.03 Chairs: TBA

## Wednesday, 31st July, 2024

### [ST13] (KIAT-KITECH-K-FAST) International R&D collaborations with Korean companies

**16:20 - 18:00 @ OC0.01 Chairs:** **DR. CHOI, Jung Han, Fraunhofer Heinrich-Hertz Institute, MR. BAE, Gun Yeul, Korea Institute of Industrial of Technology**

#### Speakers

[16:20 - 16:25] DR. MIN, Byungjoo (the Korea Institute for Advancement of Technology (KIAT))  
Title: Session opening remark

[16:25 - 16:30] DR. LEE, Sangmok (the Korea Institute of Industrial Technology (KITECH))  
Title: Session opening remark

[16:30 - 16:35] PROF. MICHAELIS, Alexander (Fraunhofer Institute for Ceramic Technologies and Systems (IKTS))  
Title: Session opening remark

[16:35 - 16:50] DR. JUN, Yooduk (Korea Institute for Advancement of Technology (KIAT))  
Title: Korea-Europe Industrial Technology Cooperation Program

[16:50 - 17:00] DR. HAN, Taeyoung (Korea-Fraunhofer Collaboration Hub for Science and Technology, Fraunhofer Institute for Ceramic Technologies and Systems IKTS)  
Title: Activities and Vision of K-FAST (Korea-Fraunhofer Collaboration Hub for Science and Technology)

[17:00 - 17:05] MR. BAE, Gun Yeul (Korea Institute of Industrial Technology (KITECH))  
Title: Introduction to KITECH Institute and Collaboration plan with K-FAST

[17:05 - 17:15] DR. JEONG, Da Woon (Korea Institute of Industrial of Technology (KITECH))  
Title: Development of Eco-Friendly Direct Lithium Extraction (DLE) Technology Using Ceramic Membranes

[17:15 - 17:30] DR. PFEFFER, Markus (Fraunhofer Institute for Integrated Systems and Device Technology (IISB))  
Title: Research and competence of Fraunhofer IISB along the value chain of wide-band gap semiconductors for power-electronic systems

[17:30 - 17:40] DR. MOON, Chiwon (CFC TeraMate)  
Title: Concealing Security Features with Invisible Near-Infrared Luminescent Materials: Joint Efforts of a Prestigious German Institute and a Korean SME

[17:40 - 17:50] PROF. YEO, Jong-souk (Yonsei University)  
Title: Establishing Global Innovation Ecosystem between Korea and Germany from Materials-Components-Equipment to Integrated Systems Technology with Fraunhofer Institutes

[17:50 - 18:00] MR. JANG, Eui-chan (Nanointech)  
Title: Digitalization of dry battery electrode (DBE) production for smart battery foundries business

## Thursday, 1st August, 2024

### [ST14] (KIST-Europe) THE Bridge, Guiding Navigate to Horizon Europe

**09:00 - 10:40 @ OC0.04 Chair:** **DR. WON, Yoo Hyung, KIST Europe**

#### Speakers

[09:00 - 09:25] MR. CHO, Woo Hyun (Center Leader, Korea-EU Research Center (KERC))  
Title: TBD

[09:25 - 09:50] MR. WON, Yoo Hyung (KIST Europe)  
Title: The Role of KIST Europe towards Horizon Europe: as a Platform, Coordinator, and Participant

[09:50 - 10:15] PROF. LEE, Ung (Korea Institute Of Science And Technology)  
Title: Accelerating the net-zero economy with CO<sub>2</sub>-hydrogenated formic acid production

[10:15 - 10:40] DR. BARTONOVA, Alena (Research Director European research collaboration at NILU)  
Title: Navigating HORIZON EUROPE in a multidisciplinary RTO: an example from NILU, Norway

## Thursday, 1st August, 2024

### [ST15] (KEIT) Global Technology Strategy Forum

**09:00 - 10:40 @ OC0.01 Chair: MR. KIM, Taehyung, KEIT**

#### Speakers

- [ 09:00 - 09:20] MR. KIM, Ki Cheol (Europe Office Representative, KEIT)  
Title: Introduction of KEIT Industrial Technology Global R&D Program
- [09:20 - 09:35] DR. KIM, Keun Jae (RISE)  
Title: International Cooperation Case 1: "Case Study: Technology Cooperation between Korea and Sweden –Maritime Sector
- [09:35 - 09:50] DR. HAN, Tae Young (Fraunhofer IKTS)  
Title: International Cooperation Case 2: Vision and Activities | Korea-Germany Global Technology Cooperation Center for Value Chain
- [09:50 - 10:40] DR. PARK, Ji Hoon (Medical Device & Healthcare Program Director(PD), KEIT)  
Title: Introduction of KEIT Medical Device & Healthcare R&D Program
- [09:50 - 10:40] DR. SIM, Chang Sup (Advanced Manufacturing Equipment Program Director(PD), KEIT)  
Title: Introduction of KEIT Advanced Manufacturing Equipment R&D Program
- [09:50 - 10:40] DR. YI, Jeung Doo (Battery Program Director(PD), KEIT)  
Title: Introduction of KEIT Battery R&D Program
- [09:50 - 10:40] DR. CHOI, Kyung Ho (KEIT Carbon & Nano Program Director(PD), KEIT)  
Title: Introduction of KEIT Carbon & Nano R&D Program

### [ST16] The 3rd Korea-EU Technology Cooperation on Carbon Neutrality and Regional Innovation - Building a Sustainable Platform for International Joint Research

**11:00 - 12:40 @ OC0.01 Chair: MR. KIM, Brian, Kim Venturous**

#### Speakers

- [11:00 - 11:25] DR. SON, Minsu (Korea Institute of Civil Engineering and Building Technology)  
Title: Cooperation Plans with Europe for IPCC Climate Adaptation Integrated Scenario
- [11:25 - 11:50] MR. OUHEL, Tomas (Institute Committee in Czech and Slovak Zoo Union.)  
Title: Showcases of Smart Solutions for Biodiversity Conservation in Czech and Indonesia
- [11:50 - 12:15] MR. SONG, Jaeryoung (National Institute of Green Technology (NIGT))  
Title: Korea-Europe cooperation measures for public diplomacy on climate technology Indonesia
- [12:15 - 12:40] MR. SEO, Kyung Won (CODA)  
Title: Directions for Promoting Cooperation between Korean and EU's Climate Tech Startups

### [ST17] Making an Impact for a Better Future – Appropriate Technology for Inclusive Global Communities 2

**14:00 - 15:40 @ OC0.01 Chair: DR. JUNG, Kangsoo, Inria Paris-Saclay hosted by École Polytechnique**

#### Speakers

- [14:00 - 14:15] MS. PARK, Mindy (Global Development Institute)  
Title: Knowing the urban context – developing appropriate technologies for African cities
- [14:15 - 14:25] MS. SIM, Yaein (Sciences Po Bordeaux)  
Title: Overview of European NGOs in Africa : Actors of development or dependency?
- [14:25 - 14:45] DR. HWANG, Ji-hyun (SEB (Skandinaviska Enskilda Banken)/Folkuniversitet Affiliated with Stockholm University)  
Title: How to Manage Changes in the Era of Automation, Decentralisation, and Adoption of AI
- [14:50 - 15:40] After a 5-minute break, the panel discussion will start at 14:50





# SPONSORS



## 10 Major Achievements in 2023

(Received 62 Organizational Commendations, Including the Safety Culture Award)



**01** 지정신 산업생태계 구축 및 인재양성 업무협약식  
Designated as a Specialized District for National Advanced Strategic Industries in Secondary Battery Cathode Materials



**02** Preliminary Feasibility Study for the Hydrogen Fuel Cell Cluster Successfully Passed



**03** Selected as the Only National Innovative Research Center (IRC) in the Advanced Biotechnology Field



**04** Record-high KRW 7.4 Trillion Investment Attracted through Strategic Corporate Recruitment



**05** Pohang-Suseo SRT Service Officially Operational



**06** POSTECH Chosen for Final Global Top 30 Universities Initiative



**07** Greenway Network Developed via Residential Green Space Expansion



**08** New Level of Disaster Response System and Infrastructure Established



**09** Cultural Ecosystem Development Fitting a Legal Cultural City



**10** Realization of Shared Welfare for Happiness and Coexistence across All Generations





# 2024 Municipal Management Directions

Municipal Slogan \_

**Creativity, Convergence, Innovation**  
**POHANG: A Sustainable Hub on the East Sea**

Direction of Efforts \_

- + Advanced development of new growth industries for **「Korea's Tech City: Battery, Bio, Digital」**
- + Prosperous and happy **「City of Livelihood Vitality」**
- + Desirable and sought-after **「Green & Blue Urban Environment」**
- + Well-conditioned residence for **「Balanced Development Hub City of the East Coast」**



Implementation Strategy \_

**Effectively Undertaking  
24 Tasks across 3 Major Areas**



DIAMOND SPONSOR

KIAT, the industrial  
technology innovation  
platform agency

leading future  
of Industrial  
Transformation

Korea  
Institute for  
Advancement of  
Technology

**kiat**

### Universities



Engineering Education  
Innovation Centers established  
in **73** of **155** engineering  
colleges nationwide

### Research Support Centers



Support commercialization  
by building **35,754** research  
equipment in **246** centers



### Companies



Average number of  
companies supported per  
year over the past five years

### Overseas



**601** overseas korean engineers  
from **22** countries provide advice  
to companies  
We excute international technological  
cooperation with more than  
**50** countries around the world.

We are a platform that connects research capabilities of universities,  
research institutes and overseas to companies.

## KIAT leads to industrial technology innovation

KIAT executes 7.3% of the Korean government's R&D budget.  
(2024 budget: 1.43 billion dollar)



# 디지털 제조업 시대, 대전환의 중심 KITECH

[www.kitech.re.kr](http://www.kitech.re.kr)



한국생산기술연구원은 중소·중견기업이 웃을 수 있는  
스마일 생산기술을 통해 미래 산업의 뿌리를 키우며  
디지털 대전환의 중심으로 성장하겠습니다.

The center of digital transformation KITECH





**SAMSUNG**  
Device eXperience

삼성전자 DX부문은 뛰어난 인재와 기술을 바탕으로,  
세상을 변화시키는 혁신적인 제품과 서비스를 창출하고  
인류사회에 새로운 가치 전달을 목표로 하고 있습니다.

## 삼성전자 DX부문

### 주요 사업부

영상디스플레이사업부

DA사업부

MX사업부

네트워크사업부

의료기기사업부

### 전사 직속

Samsung Research

디자인경영센터

한국총괄

글로벌마케팅실

생산기술연구소

로봇사업팀

전장사업팀

## 주요 사업 및 연구 분야

### • TV, Living, Kitchen



Neo QLED



BESPOKE AI 품보



BESPOKE 냉장고

### • Smart Phone, Wearable, 5G



Galaxy Z Fold6 & Z Flip6



Galaxy Ring



Galaxy Watch Ultra

### • AI, Big Data, Robot, Digital Cockpit



## 채용 프로세스

01  
인재 Pool 등록

02  
서류 전형

03  
종합 면접

04  
채용검진

05  
입사

### • 인재 Pool 등록



직무상당 신청하기

e-mail 접수  
e.recruit@samsung.com  
\*자유 형식의 Resume 혹은 CV 첨부

## Contact

E-mail : e.recruit@samsung.com  
TEL : (+82) 031-277-7630  
APPLY : www.samsungcareers.com







**한강의 기적을 넘어  
한국의 기적으로**

**산업기술 R&D가  
대한민국 경제의  
튼튼한 빛이 됩니다**

산업통상자원부 KEIT 한국산업기술기획평가원

**HD HYUNDAI**

We are hiring **R&D and AI Engineers** with advanced degrees in Europe.  
Contact us for more Information.



BRONZE SPONSOR

NATIONAL INSTITUTE FOR MATHEMATICAL SCIENCES



**산업에  
數를 놓다**

산업과 과학기술, 공공영역의 수학적 문제를 해결하는 산업수학의 중심!  
국가수리과학연구소가 대한민국 수학의 국가경쟁력 강화를 이끌어 나가겠습니다


[www.nims.re.kr](http://www.nims.re.kr)

 **국가수리과학연구소**  
National Institute for Mathematical Sciences

**한국과학기술기획평가원은  
임무지향 R&D 혁신,  
초격차 전략기술 육성,  
디지털 플랫폼화로  
미래를 준비하겠습니다!**




Lighting up the future of mankind  
**A NEW SUN**  
The Korea Institute of Fusion Energy is making it.



 **한국핵융합에너지연구원**  
KOREA INSTITUTE OF FUSION ENERGY

 **KOREA KIYON**

**Toward Your Mission  
Total Solution Provider**

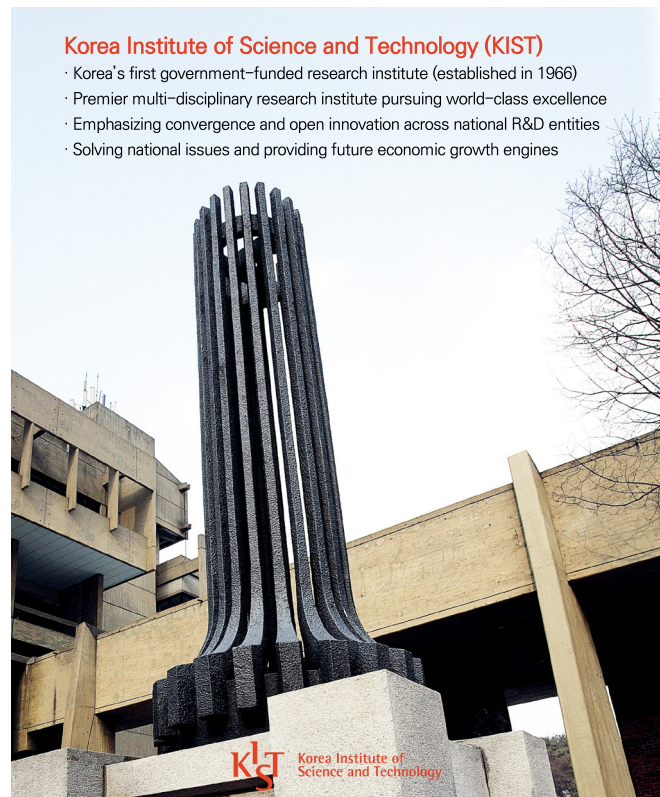
*Perovskite Solar Cell  
Tandem System*



KOREA KIYON CO.,LTD. | Seoul, Republic of Korea

Email [sales@glovebox.co.kr](mailto:sales@glovebox.co.kr)





**Along the entire value chain** – from advanced high-performance ceramics to industrial manufacturing processes, non-destructive materials testing and monitoring, prototype components and systems in complete production lines.

**Let's talk about, among others:**

- Batteries and inline cell testing via radio- and thermography
- Additive manufacturing and microfluidic devices
- Biosensors and implants
- High-frequency eddy-current NDT systems
- Customized ultrasonic hard- and software



[www.ikts.fraunhofer.de/en](http://www.ikts.fraunhofer.de/en)



BRONZE SPONSOR



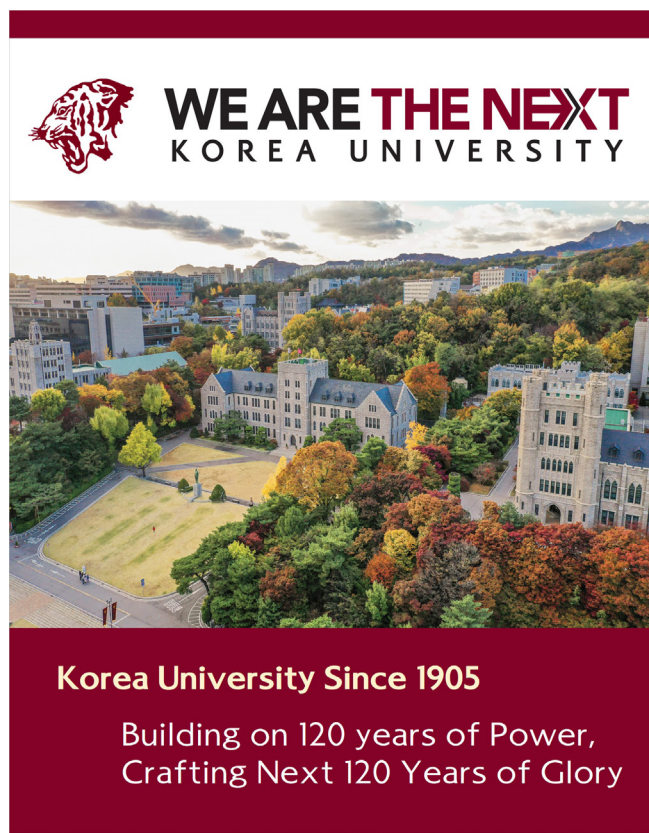
Lithium, Nickel, Palladium, Osmium, Cobalt

Korea Institute of Geoscience and Mineral Resources

**KIGAM**

For a Korea that produces critical minerals, A Korea that is rich in space resources,  
**KIGAM takes the lead!**

**KIGAM** Korea Institute of Geoscience and Mineral Resources  
124, Gwahak-ro Yuseong-gu, Daejeon, 34132, Korea Tel. +82-42-868-3114 Fax. +82-42-868-3411  
Copyright © 2019 Korea Institute of Geoscience and Mineral Resources.



**WE ARE THE NEXT**  
KOREA UNIVERSITY

**Korea University Since 1905**

Building on 120 years of Power,  
Crafting Next 120 Years of Glory

www.kribb.re.kr

**KRIBB**

생명을 향한 연구  
내일을 여는 기술  
Technology for Life, Our Future

**한국생명공학연구원**  
Korea Research Institute of Bioscience and Biotechnology

**포스코홀딩스,  
지속가능한  
미래를 열다**

다가올 미래가  
지구와 인류에게 보다 이로울 수 있도록  
2022년 3월, 포스코홀딩스가 첫걸음을 내딛습니다

환경을 생각하는 철부터 그린에너지,  
친환경 모빌리티와 스마트시티, 식량까지

철강을 넘어  
글로벌 친환경 미래소재 대표기업으로  
새로운 내일을 열어가겠습니다

인류의 지속가능한 미래를 선도하는  
글로벌 비즈니스 리더  
Green Tomorrow, With POSCO

**posco HOLDINGS**

**KIMM**

**-MACHINE**

www.kimm.re.kr

AI

Hydrogen


Bio-Health

Digital

Convergence

**KIMM** KOREA INSTITUTE OF MACHINERY & MATERIALS

**Global Comprehensive Research Institute leading “K-Machine”**



International Collegiate  
Charllenge for AI-Assisted Society

# ICCAS

## 해외교육 프로그램

충북대학교 SW중심대학사업단 장기 프로젝트 글로벌교육

주제: 기능형 디지털 치료제를 위한 의료용 기능성 게임

사전교육

4.5~7

→

기숙형  
몰입교육

7.14~24

→

영국  
현지 교육

7.28~8.4

충북대학교  
SW중심대학사업단

[illegible]



STEP

SCIENCE AND  
TECHNOLOGY POLICY  
INSTITUTE

# step by STEP

## People-centric policies for better quality of life

Designing new policies for citizens, happiness based on an unwavering commitment to people



The diagram illustrates a human head profile filled with various icons representing science, technology, and policy. A circular flow of arrows connects these elements, suggesting a continuous process of thinking and action. The icons include a compass, a wavy line, a gear, a document, a smartphone, a stack of books, a lightbulb, a globe, and a network of nodes. The text 'THINKING ABOUT PEOPLE' is written along the top curve of the head.



## GENERAL SPONSOR

Chemistry for US,  
Chemistry for EARTH

**KRICT**  
Towards a  
Sustainable Society

Chemistry is part of life, and omnipresent  
in the world around us.  
Chemistry creates a healthy and  
abundant future.

- Environment-friendly chemical technology
- Cutting-edge chemical materials
- New drug biotechnology
- Convergent new technology
- Chemical platform technology

**KRICT** 한국화학연구원  
Korea Research Institute of Chemical Technology

[www.kRICT.re.kr](http://www.kRICT.re.kr) / [international@kRICT.re.kr](mailto:international@kRICT.re.kr)

# KAIST

## QAIST New Culture Strategy for the Next 50 Years of KAIST

Question	Advanced Research	Internationalization	Start-up	Trust
<b>Creative Talent</b>	<b>Post AI Research</b>	<b>Global Talent</b>	<b>Financial Independence</b>	<b>Shared Vision</b>
<b>Education</b>	<b>Research</b>	<b>Globalization</b>	<b>Technology Commercialization</b>	<b>Value of Trust</b>
<b>Talents who ask questions</b>	<b>Question-defining Research</b>	<b>World Bridge KAIST</b>	<b>Global Value Creation</b>	<b>Building Trust</b>
<ul style="list-style-type: none"> <li>• Education program innovation</li> <li>• Education method innovation</li> <li>• Leadership building</li> <li>• 1 lab 1 book</li> </ul>	<ul style="list-style-type: none"> <li>• What, not How</li> <li>• Creative/Challenging research</li> <li>• Effective AI, Brain research</li> <li>• 1 lab 1 first research</li> </ul>	<ul style="list-style-type: none"> <li>• Campus globalization</li> <li>• Joint international research</li> <li>• Spreading the KAIST Model</li> <li>• 1 lab 1 foreigner</li> </ul>	<ul style="list-style-type: none"> <li>• Startup support</li> <li>• Field/overseas training</li> <li>• Create hands through tech commercialization</li> <li>• 1 lab 1 venture</li> </ul>	<ul style="list-style-type: none"> <li>• Nurture trustful talent</li> <li>• Transparent fund operation</li> <li>• Knowledge for successful management</li> <li>• 1 lab 1 volunteer service</li> </ul>

Korea Advanced Institute of Science & Technology

## The List of Sponsors

### Diamond Sponsors



### Gold Sponsors



### Silver Sponsors



### Bronze Sponsors



### General Sponsors



EUROPE-KOREA CONFERENCE ON SCIENCE AND TECHNOLOGY  
**CONFERENCE PROGRAMME**

*Impact, Innovation, and Connectivity  
for Transforming Tomorrow Together*

**ekc  
2024**