



Science & Technology Sessions

- [BE] Built Environment and Engineering Design
- [BS] Basic Science
- [CM] Chemical Engineering and Material Science
- [EE] Environment and Energy
- [EI] Electrical / Electronic Engineering
& Information Technology
- [LH] Life Science and Health
- [MA] Mechanical and Aerospace Technology
- [MO] Marine and Ocean Engineering
- [ST] Other Special Topics

[BE] - Built Environment and Engineering Design

Dr. Pyoung-Jik Lee (Univ. of Liverpool), Semina An (VEKNI), Dr. Eui Young Kim (KOSEANL)

Tuesday, August 15, 2023

[BE1] Dialogue with the existing - Revaluations of existed urban and architecture

R.8 (Mars 1) | 13:20 - 14:50

Chair: Kwangjin Lee | KLEE & YAHN, Max Dudler

TIME	TITLE	PRESENTER
13:20	Monument Concept - The reconstruction process of the Kaiser Wilhelm Memorial Church from ruins after World War II	Yumi Ahn KLEE & YAHN
13:50	The increasing Urban Density in Neuperlach, Germany	Hangjae Lee ATP München Planungs
14:20	Quo (ante). Urban Qualities in the cities	Kwangjin Lee KLEE & YAHN, Max Dudler

Wednesday, August 16, 2023
[BE2] Environmental quality evaluation in built environment
R.6 (Orion 1) | 13:00 - 14:30
Chair: Prof. Cheol Ho Jeong | TU Denmark

TIME	TITLE	PRESENTER
13:00	Indoor comfort of rural Houses in sub-Saharan Africa with house modifications for malaria control	Daniel Sang-Hoon Lee The Royal Danish Academy
13:25	Use of candles and risk of cardiovascular and respiratory events in a Danish cohort study	Youn-Hee Lim Univ. of Copenhagen
13:45	Effects of natural sounds on perception of urban courtyards	Pyoung-Jik Lee Univ. of Liverpool
14:00	Auralization and virtual rendering of acoustics in buildings	Cheol Ho Jeong TU Denmark
14:15	A study on verification experiments for the analysis of evacuee behavioral characteristics and the development of an evacuation simulation program	Jihyun Kwark Fire Insurers Laboratories of Korea

[BE3] Urban Spatial Structure and Urban Regeneration
R.6 (Orion 1) | 14:50 - 16:20
Chair: Prof. Yekyeong Shin | Namseoul Univ.

TIME	TITLE	PRESENTER
14:50	Decision support systems of smart cities for analyzing invisible characteristics in urban areas	Young Kim KAIST
15:10	VR-EEG experimental analysis for the evidence of design criteria of a small-scale single room	Seung Ji Lee Incheon Catholic Univ.
15:30	Improving the environment of children living in housing poverty in Korea for an inclusive urban community	Da Un Yoo Ewha Womans Univ.
15:50	Railroad-port complex development direction for regeneration of declining cities in Korea	Prof. Yekyeong Shin Namseoul Univ.
16:05	Is OOH Advertisement a Visual Pollution in Korea?	Seung Ji Lee Incheon Catholic Univ.

[BE4] Realization of Architectural Ideas for Public Value in Sustainable Way
R.6 (Orion 1) | 16:40 - 18:10
Chair: Sejin Lee | ar-ge

TIME	TITLE	PRESENTER
16:40	On authenticity in architecture and material	Sejin Lee Kangwon National Univ.
17:00	Projects developed by architectural figure and organigramme	Heejin Hwang École Nationale Supérieure d'Architecture de Paris-Belleville
17:20	Relationship between sustainability and artistic aspects in urban design	Ki Jun Kim Atelier KI JUN KIM
17:40	Exploration of Playfulness in Playgrounds, Classification of Its Types	Jaewook Kwon Spiel-Bau

Thursday, August 17, 2023

[BE5] The processes of industrial and technological development in Architecture

R.6 (Orion 1) | 11:30 - 13:00

Chair: Sung-Yong Kim | TU Bergakademie Freiberg

TIME	TITLE	PRESENTER
11:30	Form follows function? The development of industrial buildings in Saxony/Germany from the beginning of the industrial revolution up to today	Helmuth Albrecht TU Bergakademie Freiberg
12:00	The Relationship between Form and Function in 20th Century Architecture: Focusing on the "Industrialization of Architecture" in the Western Liberals	Sung-Yong Kim TU Bergakademie Freiberg
12:30	New Function in the Old Form: reuse of industrial architecture	Semina An VEKNI

[BE6] Sustainable building technology and urban environment

R.6 (Orion 1) | 14:00 - 15:30

Chair: Prof. Moon Keun Kim | Oslo Metropolitan Univ.

TIME	TITLE	PRESENTER
14:00	Rationalizing building ventilation systems with regard to energy efficiency and occupant well-being	Evangelos Belias EPFL
14:20	Implementation of Low-cost Air Quality Sensors for Occupancy and Exposure Detection in Two Swiss Office Buildings	Seoyeon Yun EPFL
14:40	Innovative Occupant-Centric Control Using White Box Method and Virtual Person-Based Thermal Preference Models	Bonghoon Jeong Yonsei Univ.
15:00	A systematic review of a decentralized ventilation system compared with conventional centralized ventilation systems adapting Nordic climates	Prof. Moon Keun Kim Oslo Metropolitan Univ.
15:15	Geophysical and geomechanical behaviour of frozen lunar simulants	Taeheon Kim NGI

[BE7] Housing - academic and industrial collaboration for humans

R.6 (Orion 1) | 15:50 - 17:20

Chair: Nammyoung Hong | TU Berlin

TIME	TITLE	PRESENTER
15:50	Housing for women - based on the example of IBA 87	Nammyoung Hong TU Berlin
16:10	Smart city strategies of Seoul: In which direction is Seoul's smart city strategy developing and what does future society look like?	Eunyoung Jang Humboldt Univ.
16:30	Living in a Monument: Possibilities and Limits of Participatory Involvement in Monument Preservation Processes in Listed 20th Century Housing Estates	Lena Hecker Bauhaus-Univ. Weimar
16:50	The Residential Culture with Neighbors	Seog-Jeong Lee ISA Internationales Stadtbauteilner

[BS] - Basic Science

Dr. Chan Kim (European XFEL), Dr. Yoojin Oh (Johannes Kepler Univ. Linz)

Wednesday, August 16, 2023

[BS1] Impact of COVID-19 on infectious diseases

R.7 (Orion 2) | 13:00 - 14:30

Chair: Prof. Jeehyun Lee | Yonsei Univ.
 Dr. Yoon Hong Choi | UK Health Security Agency

TIME	TITLE	PRESENTER
13:00	Modelling and analysis in response to the 2022 MPOX outbreak in the UK	Andre Charlett UK Health Security Agency
13:20	Optimal control problem of various epidemic models with uncertainty based on deep reinforcement learning	Hee-Dae Kwon Inha Univ.
13:40	The impact of the COVID-19 pandemic on transmission of other infectious diseases	Mark Jit London School of Hygiene_Tropical Medicine
14:00	The Korean Experience of COVID-19 Response and Preparation for New Pandemics: A Mathematical Modeling Perspective	Jacob Lee Hallym Univ. Medical Center

[BS2] Recent developments of mathematics in solving industrial problems and its applications

R.7 (Orion 2) | 14:50 - 16:20

Chair: Jongmin Han | Kyunghee Univ.
 Dr. Taeyong Ha | National Institute for Mathematical Sciences

TIME	TITLE	PRESENTER
14:50	Learning-based localization using UWB for the Applications to Human-Following Robot	Doo Seok Lee Daegu Gyeongbuk Institute of Science & Technology
15:20	Predicting Thermoelectric Material Properties using Machine Learning	Yunkyong Hyon National Institute for Mathematical Sciences
15:35	Development of Integrated Core Software for Digital Density	Hyoung Suk Park National Institute for Mathematical Sciences
15:50	Respiratory sounds classification using deep learning methods	Sunju Lee National Institute for Mathematical Sciences
16:05	Price prediction of agricultural products using Spectral Temporal Graph Neural Network	Youngho Min Hankuk University of Foreign Studies

[BS3] The future of Astronomy

R.7 (Orion 2) | 16:40 - 18:10

Chair: Dr. Minjae Kim | Univ. of Warwick

TIME	TITLE	PRESENTER
16:40	Reconsidering the correlation between Type Ia Supernova Luminosity and local star formation environment inferred from global properties of host galaxies	Young-Lo Kim Lancaster Univ.
17:10	Constraining the detectability of crystalline water ice in debris disks	Minjae Kim Univ. of Warwick

Thursday, August 17, 2023

[BS4] Researches at Large-Scale Facilities

R.7 (Orion 2) | 11:30 - 13:00

Chair: Wonhyuk Jo | European XFEL

TIME	TITLE	PRESENTER
11:30	In-situ studies in organometallic perovskite solar cells using synchrotron x-rays	Hyo Jung Kim Pusan National Univ.
11:55	High-resolution spectral ptychography with soft X-rays	Benedikt Daurer Diamond Light Source
12:20	Impact of Input Current on Electromagnetic and Thermo-Mechanical Behaviors of KSTAR IVCC	Jin Gu Kang Beok Seok Kim Seoul National Univ.
12:40	Advances in Sensitive Optical Magnetic Imaging: Unveiling the Orbital Hall Effect	Young-Kwan Choi MPI for Chemical Physics of Solids
13:00	Sputter-deposited Zr-Fe ₂ O ₃ nano-photoanodes for enhanced photoelectrochemical water splitting	Hyun Hwi Lee POSTECH

[BS5] Ultrafast imaging and structural dynamics: advances and applications

R.7 (Orion 2) | 14:00 - 15:30

Chair: Hyo Jung Kim | Pusan National Univ.

TIME	TITLE	PRESENTER
14:00	Multiplex movie of concerted rotation of molecules on a 2D material	Markus Scholz DESY
14:25	In-situ Transmission Electron Microscopy and Image Processing	Junbeom Park Forschungszentrum Jülich
14:50	Ultrafast X-ray speckle correlation techniques at MID of European XFEL	Wonhyuk Jo European XFEL
15:10	Terahertz near-field spectroscopy for non-contact mapping of electrical properties below the diffraction limit	Teun-Teun Kim Univ. of Ulsan

[BS6] Characterization to manipulation in nano technology

R.7 (Orion 2) | 15:50 - 17:20

Chair: Prof. Sungsu Park | Sungkyunkwan Univ.

Prof. Donghwan Kim | Sungkyunkwan Univ.

TIME	TITLE	PRESENTER
15:50	[KEYNOTE] Force-tuned Avidity of Spike Variant-ACE2 Interactions viewed on the Single-Molecule Level	Peter Hinterdorfer Johannes Kepler Univ. Linz
16:30	Microfluidic strategy for circulating biomarkers	Hyo-Il Jung Yonsei Univ.
16:50	Stress response and microbiome roles in coral	Seonock Woo Korea Institute of Ocean Science and Technology
17:05	Investigation of lectin binding to SARS-CoV-2 spike glycans using single molecule force spectroscopy	Yoojin Oh Johannes Kepler Univ. Linz

[CM] - Chemical Engineering and Material Science

Dr. Joo Hyoung Kim (IMEC)

Wednesday, August 16, 2023

[CM1] Advancements in Battery Technology: From Materials to Applications

R.11 (Venus 1) | 13:00 - 14:30

Chair: Dr. Juhan Lee | Heraeus Battery Technology

TIME	TITLE	PRESENTER
13:00	Leap Towards Future: The Evolution of Battery Technologies through Cross-Disciplinary Collaborating: rechargeable energy storage	Juhan Lee Heraeus Battery Technology
13:10	[KEYNOTE] MXene and hybrid electrodes for high performance energy storage	Volker Presser INM - Leibniz Institute for New Materials
13:50	Understanding the influence of interlayer distance and particle size on lithium intercalation kinetics in MoS ₂	Jaehoon Choi KIT
14:10	Solid-State Polymer Electrolytes for Lithium-Metal Batteries	Unho Jung Helmholtz Institute Ulm / KIT

[CM2] Innovative Optoelectronic Materials

R.11 (Venus 1) | 14:50 - 16:20

Chair: Prof. Dong Ryeol Whang | Hannam Univ.

TIME	TITLE	PRESENTER
14:50	Progress in Lighting Materials and Devices Using Quantum Dots	Armin Wedel Fraunhofer Institute for Applied Polymer Research
15:15	The Role of Alpha-Methylbenzyl Ammonium Iodide to Reduce Defect Densities in Perovskite Device	Markus Scharber Linz Institute for Organic Solar Cells (LIOS) and Institute for Physical Chemistry
15:40	A Technology of High-Performance Discontinuous Fibre Composites using Reclaimed Fibres for Sustainability and Circular Economy	Kyungil Kong KSEAUK
16:00	Ligand Engineering of Quantum Dots for Bright and Stable Light-Emitting Diodes	Dong Ryeol Whang Hannam Univ.

[CM3] Journey for the Next Generation of Energy Storage Systems

R.1 (Jupiter) | 16:40 - 18:10

Chair: Hunho Kwak | Umicore

TIME	TITLE	PRESENTER
16:40	The Rise of a Membrane-Free Alkali Metal-Iodide Battery with a Molten Salt Electrolyte	Juhan Lee Heraeus Battery Technology
17:00	Fine Particle Separation Methods for the Recycling of Lithium Ion Batteries and Water Electrolyzers	Sohyun Ahn Helmholtz-Zentrum Dresden-Rossendorf
17:20	Mechanical Analysis of Recycled Carbon Fiber Composites from Waste Hydrogen Tanks	Sangjun Jeon Kongju National Univ.
17:40	General framework of discovering the origin of catalyst degradation for electrochemical CO ₂ reduction.	Ung Lee KIST

Thursday, August 17, 2023

[CM3] Journey for the Next Generation of Energy Storage Systems

R.9 (Mars 2) | 14:00 - 15:30

14:00	Who will be the first big player of the all solid-state batteries?	Keon Woo Lee Henkel AG & CO. KGaA
14:20	A Novel Design Strategy for High-performance Silicon-based Anodes in Lithium-ion Batteries: Tuning N/P Ratio and Prelithiation Degree	Hyunsang Joo Helmholtz Institute Münster
14:40	Porocarb® Synthetic Carbon performance additive for innovation in battery applications	Juhan Lee Heraeus Battery Technology
15:00	The laser based manufacturing technologies of the Battery EV	Woo Sik Chung Fraunhofer ILT

[EE] - Environment and Energy

Dr. Eun Young Lee (Univ. of Vienna), Dr. Kyungil Kong (Univ. of Bristol)
 Dr. Jinyoun Cho (KOSEABe)

Tuesday, August 15, 2023

[EE1] Sustainability and Circular Economy of Inorganic Materials

R.7 (Orion 2) | 10:50 - 12:20

Chair: Dr. Fiseha Tesfaye | Metso Outotec Metals Oy

TIME	TITLE	PRESENTER
10:50	Pushing the Frontier on E-Scrap Processing	Lauri Pesonen Metso
11:10	Artificial Intelligence for Flow Applications in Environmental and Energy Sciences	Mario Rüttgers Jülich Supercomputing Centre
11:30	Conceptual modeling of laboratory-scale solar energy system for district heating	Jaewook Chung Tallinn Univ. of Technology
11:50	Comparison and analysis of electrical conductivity characteristics in dense and porous microstructures of cathode materials for solid oxide fuel cell applications	Jung Hyun Kim Hanbat National Univ.
12:10	Development of Quad-Generation System for Rooftop Smart Farm	Jaejoon Choi Korea Institute of Energy Research

[EE2] Clean Manufacturing of Steel and Alloys

R.7 (Orion 2) | 13:20 - 14:50

Chair: Dr. Min-Kyu Paek | Research Institute of Industrial Science & Technology

TIME	TITLE	PRESENTER
13:20	The use of alternative reductants in pyrometallurgical slag cleaning	Daniel Lindberg Aalto Univ.
13:40	The key role of Metso's sustainable technologies in limiting global warming to 1.5 °C	Fiseha Tesfaye Metso Outotec Metals Oy
14:00	Reaction between Alloy and Oxide during High Temperature Process	Kyung-Ho Kim Institute for Advanced Engineering
14:20	Manufacturing of high-efficient, cost-effective metal-alloy powder production by angular tundish control in gas atomization system	Eunggyun Kim Korea Institute of Industrial Technology

[EE3] Sustainable organic waste/wastewater management

R.7 (Orion 2) | 15:10 - 16:40

Chair: Prof. Boram Kim | INSA Lyon

TIME	TITLE	PRESENTER
15:10	Application of hydrophobic binders for the selective agglomeration of fine particles for the recycling of PEM water electrolyzers	Sohyun Ahn Helmholtz-Zentrum Dresden-Rossendorf
15:30	Enhanced WAS digestion using mild alkaline-thermal pretreatment	Sang-Hyoun Kim Yonsei Univ.
15:50	Co-hydrothermal carbonization of pine residual sawdust and non-dewatered sewage sludge - effect of reaction conditions on hydrochar characteristics	Hassen Benbelkacem INSA Lyon

Wednesday, August 16, 2023
[EE4] 2ND Korea-EU Technology Cooperation on Carbon Neutrality and Sustainable Regional Innovation
R.1 (Jupiter) | 13:00 - 14:30 Chair: Prof. Junbeum Kim | Univ. of Technology of Troyes

TIME	TITLE	PRESENTER
13:10	K-ClimateTech Hub: Envisioning the Global Public Technology Initiative	Jaeryoung Song National Institute of Green Technology- Korea
13:30	Introduction to the Green Class Rating Assessment and Application	Junbeum Kim Univ. of Technology of Troyes
13:50	Developing AR6-based socio-economic scenario assessment models at the regional scale for climate change adaptation	Minsu Son Korea Institute of Civil Engineering and Building Technology
14:10	Study on eliminating fuel cell load fluctuations to improve the lifetime of hydrogen electric vehicles	Beomjun Kim Korea Institute of Energy Research
14:30	How does venture capital investment leverage green growth in Korea and Europe and what is the hurdle to overcome?	Brian Kim Kim Venturous

R.1 (Jupiter) | 14:50 - 16:20

14:50	A Predictive and Adaptive Agrivoltaic Solution for Renewable Energy Production and Crop Yield	Sung Yoon ENVELOPS
15:05	Digital Transformation and Carbon Neutrality	Sungwoong Hong Cheongju Univ.
15:20	A Study on Assessment of Carbon Absorption Footprint (CAF) in Local Governments	Soongil Kwon Univ. of Technology of Troyes
15:35	Development of evaluation model and analysis monitoring system for agricultural products cultivation environment using big data-based IoT sensor.	Seungjun Jeon Univ. of Technology of Troyes
15:50	Developed an edge-computing-based carbon emission measurement device for smart factories and developed a carbon reduction monitoring system by building a carbon emission and reduction evaluation model	Jitae Kim UTT

Thursday, August 17, 2023

[EE5] Earth and environmental changes by human activities - living in the Anthropocene

R.5 (Taurus 2) | 11:30 - 13:00

Chair: Dr. Eun Young Lee | Univ. of Vienna

Prof. Tae Soo Chang | Chonnam National Univ.

TIME	TITLE	PRESENTER
11:35	[KEYNOTE] The unintended human footprint on European river systems	Andreas Lang Univ. of Salzburg
12:05	Inhomogeneous warming of the ocean during the recent decades	Wonsun Park Pusan National Univ.
12:30	Effect of Anthropogenic Aerosols on Cloud Lifecycle	Jung-Sub Lim Univ. of Munich

R.1 (Jupiter) | 14:00 - 15:30

14:00	Sustainable Coffee	Seung-Hun Lee Seoul National Univ.
14:20	Prospective Life Cycle Assessment Method for Low-fossil Transition	Seung Hye Lee INSA Toulouse
14:40	Promoting Sustainable Lifestyles through Smartphone Apps in Europe	Byungdo Kim Norwegian Univ. of Science and Technology
15:00	Austria-Korea cooperation on Anthropocene research: Preliminary results from sediment cores on the west coast of South Korea	Eun Young Lee Univ. of Vienna

[EI] - Electrical/Electronics Engineering & Information Technology

Dr. Dooyoung Hah (ASCOF), Dr. Jae-Sung An (KSSEA)

Tuesday, August 15, 2023

[EI1] Technologies of AR and VR

R.6 (Orion 1) | 10:50 - 12:20

Chair: Dr. Ji Yong Jeong | Sony

TIME	TITLE	PRESENTER
10:50	Image sensing technology for AR/VR applications	Jiwon Lee Hanyang Univ. ERICA
11:20	High Data Compression of Micro-display with a Foveated Rendering for Virtual Reality	Bong-Choon Kwak LG Display
11:50	Metaverse With XR Interactions and Experience-Centric AI: A Trial for Conversational Voice Bot	Junseong Bang ETRI

[EI2] Micro and Nano Systems (From device to integrated systems)

R.6 (Orion 1) | 13:20 - 14:50

Chair: Dr. Seonho Seok | C2N-CNRS-Univ. of Paris Saclay

Prof. Jung Mu Kim | Jeonbuk National Univ.

TIME	TITLE	PRESENTER
13:20	Advanced Manufacturing Technologies for Printing Composite Materials for Energy and Medical Applications	Jaemin Lee Univ. of Leeds
13:45	Processing-In-Memory with Self-Rectifying Resistive Crossbar Array	Nam-Seog Kim Chungbuk National Univ.
14:10	SENTENNA with hand grip sensing	Jung Mu Kim Jeonbuk National Univ.

R.6 (Orion 1) | 15:10 - 16:40

15:15	Study on cyclic tensile behaviours of PDMS/MWCNTs micro-composite films	Kyu Song Seoul National Univ. of Science and Technology
15:40	Simple and Rapid Cortisol Detection via Wearable Cortisol Aptasensor	Jai Eun An Sungkyunkwan Univ.
16:05	Wireless sensor node and wearable gas sensing technology for security applications.	Ignacio Llamas-Garro CTTC

Wednesday, August 16, 2023

[EI3] Theory and practice of computer science and innovative information technology

R.3 (Hörsaal) | 13:00 - 14:30

Chair: Dr. Juhoon Kim | Deutsche Telekom

TIME	TITLE	PRESENTER
13:00	Automotive Software Architecture & Open Source Projects	Changhyeok Bae MBition
13:25	On scientific knowledge and approaches to develop technologies	Jae Sook Cheong Bayreuth Univ.
13:50	The Effect of Different Auditory Feedbacks on Interpersonal Coordination	Tonghun Hwang Leibniz Univ. Hannover

[EI4] Innovative semiconductor devices and circuits, packaging and systems, and their scientific and industrial applications

R.3 (Hörsaal) | 14:50 - 16:20

Chair: Dr. Jung Han Choi | Fraunhofer Heinrich-Hertz
Institute

Dr. Heungjae Choi | Cardiff Univ.

TIME	TITLE	PRESENTER
14:50	[KEYNOTE] Semiconductor Optical Sensors and Applications: A Case Study on Sensor Development through TCAD Simulation	Jong Mun Park ams-OSRAM
15:30	A New Design Method of Bandpass Filter Considering Frequency Variations for Wide Bandwidth	Youna Jang Soonchunhyang Univ.
15:55	High-frequency ICs for optical interconnection and packages using flexible substrate technology	Jung Han Choi Fraunhofer Heinrich-Hertz Institute

R.3 (Hörsaal) | 16:40 - 18:10

16:40	Policy trends of spectrum for the next generation broadband mobile from non-technical viewpoints	Juhoon Kim Deutsche Telekom
17:05	The GaN HEMTs technology for beyond 5G and microwave energy application	June Sik Kwak RFHIC Inc.
17:30	The Present State and Challenges of 4H-SiC Power Devices	Minwho Lim Fraunhofer IISB
17:50	A Study on applied ceramic packages with high heat dissipation and low loss for 5G communication	Juwan Kim RF Materials Co.,Ltd.

Thursday, August 17, 2023

[E15] Technologies and environments for Web 3.0

R.3 (Hörsaal) | 14:00 - 15:30

Chair: Prof. Young Saeng Park | Univ. of Warwick

TIME	TITLE	PRESENTER
14:00	Behavioural Sequence Prediction Model using Digital Footprint from IoT Device - Economics of Learning in Prediction	Youngseok Choi Kingston Univ. London
14:30	Trilemma of Federated Learning: Privacy, Accuracy and Fairness	Kangsoo Jung Inria
15:00	Understanding the Design of User Experience and User Interface in Web 3.0	Young Saeng Park Univ. of Warwick

[E16] To the Edge and Beyond AI in Computer Vision

R.3 (Hörsaal) | 15:50 - 17:20

Chair: Dr. Seul-Ki Yeom | Nota AI

TIME	TITLE	PRESENTER
15:50	Deep learning models outperform across domain, but how to utilize it properly?	Hee Kim Heidelberg Univ.
16:10	A deep learning based visual odometry approach for aerial navigation	Jeongmin Kang Linköping Univ.
16:35	Overview of Magnetic Resonance Imaging Reconstruction Methods using Various Constraints to Solve the Ill-posed Problem	Jinho Kim FAU / Siemens Healthineers
17:00	Automatic Neural Network Pruning that Efficiently Preserves the Model Accuracy	Seul-Ki Yeom Nota AI

[LH] - Life Science & Health

Dr. Hyun-Woo Jeong (VEKNI), Dr. Seung-kyu Ha (KOSEAbE), Dr. Youngchan Kim (KSEAUK)

Tuesday, August 15, 2023

[LH1] Navigating a Post COVID-19 World: Strengthening global resilience against unprecedented infectious diseases

R.5 (Taurus 2) | 09:00 - 10:30

Chair: Dr. Baek-Soo Han | KRIBB

Dr. Moo-Seung Lee | KRIBB

TIME	TITLE	PRESENTER
09:00	Role of Mathematical Modelling in the UK National Vaccination Programmes - Pertussis Vaccination	Yoon Hong Choi UK Health Security Agency
09:25	Responding faster and smarter to infectious disease pandemics	Andre Charlett UK Health Security Agency
09:50	Enterohaemorrhagic Escherichia coli Shiga toxin-mediated peritoneal Wnt production exacerbates lethality by regulating tight junctions	Moo-Seung Lee KRIBB
10:10	Introducing next-generation biodefense research laboratory (NGBRL)	Baek-Soo Han KRIBB

Wednesday, August 16, 2023

[LH2] Synergetic Biochemistry and Bioelectronics for Environmental & Human Health

R.4 (Taurus 1) | 14:50 - 16:20

Chair: Dr. Kyongok Kang | Forschungszentrum Jülich

TIME	TITLE	PRESENTER
14:50	MR Image Reconstruction using Deep Learning	HyunWook Park KAIST
15:10	Combining Computational Fluid Dynamics and Machine Learning for Surgery Planning	Mario Rüttgers Jülich Supercomputing Centre
15:25	Detection of emerging organic chemicals from the soluble fraction of ambient urban PM2.5 through non-targeted analysis	Seungyun Baik KIST Europe
15:40	Mechanisms of cellular uptake and membrane permeabilisation by <i>Candida albicans</i> toxin candidalysin	Sejeong Lee King's College London
15:55	Development of hyper-activity glycosynthase for high value chemicals	Seung Seo Lee Univ. of Southampton
16:10	The electric-responses of bacteriophage fd, DNA-viruses and applied to other materials	Kyongok Kang Forschungszentrum Jülich

[LH3] State-of-the-art technologies in biology and bioengineering

R.4 (Taurus 1) | 16:40 - 18:10

Chair: Prof. Hongryeol Park | MPI for Molecular Biomedicine

Dr. Juyong Yoon | KIST Europe

TIME	TITLE	PRESENTER
16:40	[KEYNOTE] SPARXS: Single-molecule Parallel Analysis for Rapid eXploration of Sequence space	Chirlmin Joo Delft Univ. of Technology
17:10	Exploring the Therapeutic Potential of Lung-Targeted Intervention in Autoimmune Diseases	Hongryeol Park MPI for molecular biomedicine
17:30	The Homo- and Heterodimer Formation Amongst Various Human Galectins	Seunghye Lee LMU München
17:50	Characterizing a 3' transcripts of L-type calcium channel genes in the human brain	Hami Lee Univ. of Oxford

Thursday, August 17, 2023

[LH4] Modifiable factors associated with Non-Communicable Diseases

R.4 (Taurus 1) | 11:30 - 13:00 Chair: Dr. Hwayoung Noh | Leon Berard Cancer Center

TIME	TITLE	PRESENTER
11:30	LH4 session introduction - Lifestyle factors and Non-communicable diseases	Hwayoung Noh Leon Berard Cancer Center
11:40	[KEYNOTE] Precision Nutrition: Unlocking the Power of Foods for Cancer Prevention	Jeongseon Kim National Cancer Center
12:10	The association between dietary carotenoid/carotenoid subclasses and the risk of breast cancer risks: a case-control study among Korean women	Sin-Hye Park Hallym Univ.
12:35	Gut Microbiota Interacting with Diet in Relation to Metabolic Health in Korean Adults	Hwayoung Noh Leon Berard Cancer Center

[LH5] Latest advances in cancer science and medicine: From basic to clinical applications

R.4 (Taurus 1) | 14:00 - 15:30 Chair: Prof. Reinhard Büttner | Univ. Cologne

TIME	TITLE	PRESENTER
14:00	Untwining the heterogeneity of ALK-rearranged non-small cell lung cancer using spatially resolved transcriptomics	Ka-Won Noh Univ. of Cologne
14:18	Feasibility of the Anti-carcinoembryonic antigen Monoclonal Antibody-dye conjugate, SGM-101, for Near-infrared Fluorescent Cancer-specific Intraoperative Imaging for Gastric Cancer using Xenograft Animal Models	Annie Eunhee Koo TU Munich / Seoul National Univ.
14:36	NR2F2 controls malignant squamous cell carcinoma state by promoting stemness and invasion and repressing differentiation	Yura Song Univ. libre de Bruxelles
14:54	Clinical applications of circulating tumor cells in non-small cell lung cancer	Varun Gupta Lung Clinic Hemer
15:12	The development of a design for an ideal laboratory for cancer biophysics	Necla Kenar Lim KENDİSİ

[LH6] Disruptive Innovations in the Biomedical Space: Science, Technology and Commercialization

R.4 (Taurus 1) | 15:50 - 18:00 Chair: Prof. K Hun Mok | Trinity College Dublin

TIME	TITLE	PRESENTER
15:50	New cutting-edge Technologies of Self-lighting Nanoparticle Photodynamic Cancer Therapy and the effectiveness of treatment	Hyunsoo Lim Sakarya Univ.
16:20	Programmable Manipulation of Labeled and Label-free Cells Using Magnetophoresis	Byeonghwa Lim DGIST
16:50	MPI system using movement of FFL generated by 3D arrangement of permanent magnets	Hyobong Hong ETRI
17:15	DNA nanoengineering for efficient DNA-based data storage and high throughput proteomics	Hansol Choi Harvard Medical School
17:30	Human blood based biomarkers development for prethrombotic diagnosis of venous thromboembolism	Bo Hyun Ryu KIST Europe
17:45	Nuclear differentiation inside muscle syncytium	Minchul Kim IGBMC

[MA] - Mechanical and Aerospace Technology

Dr. Hyuk Park (ASCOF), Prof. Woo-Suck Han (ASCOF)

Wednesday, August 16, 2023

[MA1] Future mobility

R.5 (Taurus 2) | 13:00 - 14:30

Chair: Dr. Changho Yang | Oxford Brookes Univ.

TIME	TITLE	PRESENTER
13:00	Comparative analysis of current and future hydrogen storage technologies for the transport sector	Hyunju Park TU Dresden
13:20	A study on the Business Model of Smart Design Platform	Wook Hyun Lee Korea institute of Energy research
13:40	Advanced battery & hydrogen technology for future mobility	Seung-Wook Baek KRISS
14:00	Performance Evaluation of a 2-Liter Hydrogen Direct Injection Engine	Young Choi KIMM

[MA2] Advanced Technologies in Space Engineering and Applications

R.5 (Taurus 2) | 14:50 - 16:20

Chair: Dr. Min Son | Univ. der Bundeswehr München

TIME	TITLE	PRESENTER
14:50	Thermal management for future space and energy applications	Namkyu Lee Yonsei Univ.
15:10	Quantitative Flame Studies using Signal-enhanced Raman Spectroscopy	Haisol Kim German Aerospace Center
15:30	Introduction of Hanwha systems' micro SAR satellite	Youngbum Song Hanwha systems
15:50	Introduction of Hanwha micro SAR Payload	Kyeongrok Kim Hanwha Systems

[MA3] Inclusive Development through Appropriate Technology and STEM Education

R.5 (Taurus 2) | 16:40 - 18:10

Chair: Dr. Byoung Yoon Kim | ITER Organization, I-DREAM

TIME	TITLE	PRESENTER
16:40	Cost-Effective and Inkjet-Printable Paper-Based Electronic Chips for POC Devices in Developing Countries	Kwanwoo Shin Sogang Univ.
17:00	[KEYNOTE] Self-sufficiency Project for Medical Rehabilitation Assistance Devices for the socially disadvantaged	Noah Min GONGSAENG
17:20	Vertical Integration Approach for Engineering Education	Soo Young Chang POSTECH
17:40	Effectiveness Analysis of a short-term STEM camp program in Tanzania	Eunjung Kim CNRS, LAMSADE, Paris-Dauphine Univ.
18:00	Science and technology to solve social problems? The case of digital platforms and urban informality	Mindy Park Univ. of Manchester

Thursday, August 17, 2023

[MA4] Emerging Trends and Advancements in Aeronautics and Mechanical Engineering

R.2 (Terra) | 11:30 - 13:00 Chair: Ms. Seunghee Ko | German Aerospace Center

TIME	TITLE	PRESENTER
11:30	Laser Diagnostics for Investigation of Energy Conversion and Transport Processes	Lars Zigan Uni. der Bundeswehr München
12:00	In-situ x-ray phase contrast observation of the full penetration spot welding on limited aluminum material thickness	Woo Sik Chung Fraunhofer ILT
12:20	Predictive aircraft maintenance - a new paradigm and remaining challenges	Juseong Lee TU Eindhoven
12:40	Influence of wheel defects on the risk of subsurface-initiated rolling contact fatigue of railway wheels	Jaseung Lee Chalmers Univ. of Technology

[MA5] Advanced Technologies for Modeling and Simulation (Digital Twin)

R.2 (Terra) | 14:00 - 15:30 Chair: Dr. Heesoo Kim | Dyson Technology Limited

TIME	TITLE	PRESENTER
14:00	Finite Element Modeling and 3D Printing of Curvilinear Fibre Reinforced Composite.	Georak Park Seoul National Univ. of Science and Technology
14:30	Predictive method for fatigue behaviour of dental implants	Woo-Suck Han ASCOF
15:00	Effect of local wall thinning on structural integrity for 90° back-to-back pipe bends	Youngjae Choi Seoul National Univ. of Science and Technology

[MO] - Marine and Ocean Engineering

Dr. Myeong-Jo Son (KOSES), Dr. Byongug Jeong (KSEAUK)

Thursday, August 17, 2023

[MO1] SNAK-EKMOA

(Sailing Towards a Greener Future with Digitalization and Decarbonization)

R.1 (Jupiter) | 11:30 - 13:00

Chair: Prof. Jaeyong Lee | Dongeui Univ.

Dr. Sungil Ahn | Univ. of Strathclyde

TIME	TITLE	PRESENTER
11:30	[KEYNOTE] Current Status of Maritime Decarbonization (tentative)	Keunjae Kim SSPA, RISE
11:50	Analysis of the in-service speed performance of a 176k bulk carrier based on a novel dynamic Multi-Input, Single-Output (MISO) model	Inwon Lee Pusan National Univ.
12:05	A method for reducing propeller-induced vibration of a ship using an electric motor	Kwang-Jun Paik Inha Univ.
12:20	Prognostics and Health Management for Ship Machinery Systems	Jaehan Jeon Univ. of Strathclyde
12:35	A framework to generate contact information for autonomous ships in berthing	Jaeyong Lee Dongeui Univ.
12:50	Integrating Human Factors in a Risk Assessment Framework for Shipboard Decarbonisation Systems	Sungil Ahn Univ. of Strathclyde

[MO2] EKMOA-KMI (Emerging technologies in the marine sector)

R.1 (Jupiter) | 14:00 - 15:30

Chair: Dr. Hayoung Jang | Univ. of Strathclyde

Dr. Yong Sung Ahn | Korea Maritime Institute

TIME	TITLE	PRESENTER
14:00	Retrofit solutions on ships to achieve 55% GHG reduction by 2030	Eddie Blanco-Davis Liverpool John Moores Univ.
14:25	The need to establish and manage Inventory Zones to calculate air pollutant emissions from ships in South Korea.	Pil-Su Kim EI LAP INC.
14:50	Contribution of Ship and Ports Emissions to Air Pollutants on Incheon and Busan Port Area in South Korea.	Daeryun Choi Anyang Univ.
15:10	Experimental investigation of the floatation stability of a scaled floating wind turbine in waves	Kyungsoo Kang Univ. Duisburg-Essen

[MO3] EKMOA- KMC

(Alternative marine fuels and zero-carbon shipping economy of the shipping sector)

R.1 (Jupiter) | 15:50 - 17:20

Chair: Mr. Chybyung Park | Univ. of Strathclyde

Dr. Mingyu Kim | Korea Maritime Cooperation Center

TIME	TITLE	PRESENTER
15:50	The role of Offshore Wind in Maritime Decarbonisation	David Cooper Offshore Renewable Energy Catapult
16:15	International Trends in Green Shipbuilding and Response in The Republic of Korea	Daejung Hwang KMC
16:40	Ammonia-Based Fuel Cell Hybrid Ships: Pioneering Sustainable and Eco-Friendly Maritime Solutions	Jeong Kuk Kim Korea Maritime and Ocean Univ.
17:00	Introduction of KORIES and related R&D topics	Sungyoon Choi KOMERI

[ST] - Other Special Topics

Dr. Changseon Ryu (KIST Europe)

Tuesday, August 15, 2023

[ST1] 1-Allyship and Leadership in Changing Era : Career experiences

R.5 (Taurus 2) | 13:20 - 14:50

Chair: Seonhi Ro | Ford Motor Company

TIME	TITLE	PRESENTER
13:20	Opening Ceremony & Introduction	Chair
13:40	Women Career in Korea	Eunok Jung Konkuk Univ.
13:55	Life is a movie: some thoughts on how to make it fun	Jae Sook Cheong Bayreuth Univ.
14:10	Panel discussion	Chair

[ST1] 2-The Women in STEM : Allyship and Leadership in Changing Era : Allyship workshop

R.5 (Taurus 2) | 15:10 - 16:40

Chair: Dr. Hyong Sil Cho | SiLnD

Prof. Mihye Kim | Chungbuk National Univ.

TIME	TITLE	PRESENTER
15:10	Allyship in Changing Era	Mihye Kim Chungbuk National Univ.
15:30	Discussion	Chair

Thursday, August 17, 2023

[ST2] An Introduction to the Life of Dr. Mirok Lee

R.9 (Mars 2) | 15:50 - 17:20

Chair: Dr. Ok Soon Park | VEKNI

TIME	TITLE	PRESENTER
15:50	The life of Dr. Mirok Lee (1899-1950)	Ok Soon Park VEKNI