

ACEM26 / Structures26 Program at a Glance

AUGUST 24 Monday					
Time / Rm	Rm 201 (A)	Rm 202 (B)	Rm 204 (C)	Rm 205 (D)	Rm 206-207 (E)
08:00 – 09:30	Registration				
09:30 – 09:40	Opening Ceremony Opening Remarks (Thomas Kang) Rm 206-7 (E)				
09:40 – 10:20	PLENARY KEYNOTE LECTURE M1E: <i>Wind Hazard Assessment from Climate Reanalysis Data</i> (Francesco Ricciardelli, Italy) Rm 206-7 (E)				
10:20 – 10:30	Coffee Break				
10:30 – 11:00	Session Preparation	Session Preparation	KEYNOTE LECTURE M2C: Seismic Design and Dynamic Response of Precast Moment Frame System with Various Mechanical Splices (Deuckhang Lee, Korea)	Session Preparation	KEYNOTE LECTURE M2E: Wind Effect and Wind Resistance Design of Tower Structures (Qingshan Yang, China)
11:00 – 12:30	M3A: Advanced Numerical Methods and Offshore Structural Engineering	M3B: Concrete Materials and Structural Performance	M3C: Hazard Assessment and Earthquake Risk Analysis	M3D: Geomechanics for Sustainable and Climate-Resilient Infrastructure I	M3E: China-Korea-Kazakhstan Joint Seminar on Green Construction and Intelligent Disaster Prevention
12:30 – 13:30	Lunch (Convensia 2F Premier Ballroom A)				
13:30 – 15:10	M4A: Recent Advances in Nano Research and Multiscale Structures	M4B: Advances in Structural Health Monitoring and Prognostics	M4C: Key Engineering Performances of Structural Components for Better Seismic-Resistant Systems	M4D: Wind Engineering, Aerodynamics and Structural Performance	M4E: Artificial Intelligence and Innovative Materials for Smart Water Treatment
15:10 – 15:30	Coffee Break				
15:30 – 17:00	M5A: Structural Seismic Performance and Vibration Control	M5B: AI for Resilient Civil Infrastructure (AI+KCIR Center)	M5C: Advanced Computational Methods for Structural Optimization and Digital Twin Technologies	M5D: Performance of Elements under Various Loading, Construction and Analysis Scenarios	M5E: 2026 ECO UP International Conference on Smart Water Technologies and Artificial Intelligence Applications
17:30 – 19:30	Welcome Reception (Oakwood Premier Room, 36F)				

ACEM26 / Structures26 Program at a Glance

AUGUST 25 Tuesday			
Time / Rm	Rm 202 (B)	Rm 204 (C)	Rm 205 (D)
08:30 – 09:30	Registration		
09:30 – 10:00	KEYNOTE LECTURE T1B: Building an Autonomous Laboratory for Concrete Materials Powered by Observation-Informed Machine Learning (Jae Hong Kim, Korea)	KEYNOTE LECTURE T1C: Biopolymer-Based Soil Treatment (BPST): A Nature-Based Solution for Sustainable Geotechnical Engineering (Ilhan Chang, Korea)	KEYNOTE LECTURE T1D: Reframing PBWD: New Research Findings and Advances in Computational Methods (Thomas Kang, Korea)
10:00 – 11:40	T2B: Advanced Resilience Evaluation of Structural Materials and Systems	T2C: Engineering Behavior of Geomaterials	T2D: UTFORSK Seminar: Digital Technology for Sustainable Built Environment
11:40 – 12:40	Lunch (Convensia 3F, 302-303)		
12:40 – 14:10	T3B: Remote Sensing and Geophysical Characterization of ground	T3C: Geomechanics for Sustainable and Climate-Resilient Infrastructure II	T3D: Multiphysics Modeling and Forensic Evaluation of Composite Systems in Structural, Geotechnical, and Hydraulic Engineering – Part I
14:10 – 14:30	Coffee Break		
14:30 – 16:00	T4B: Soil-Structure Interaction and Underground Space	T4C: Advances in Deep Geological Disposal of High-Level Radioactive Waste	T4D: Multiphysics Modeling and Forensic Evaluation of Composite Systems in Structural, Geotechnical, and Hydraulic Engineering Part II

On-site Poster Sessions	
Poster Sessions	8/24 - 8/25 08:00 AM - 06:00 PM Posters will be displayed at the second-floor lobby

TECHNICAL PROGRAM

REGISTRATION
08:00 – 17:00
Convensia, 2F Lobby

OPENING CEREMONY

SESSION M0E

Room 206-207

09:30 – 09:40

Thomas Kang, Co-Chairman, ACEM26/Structures26

PLENARY KEYNOTE SPEECH (08/24)

SESSION M1E

Room 206-207

09:40 – 10:20

Wind Hazard Assessment from Climate Reanalysis Data; Francesco Ricciardelli (Italy)
Chairman: Thomas Kang

KEYNOTE LECTURES (08/24)

SESSION M2C

Room 204

10:30 – 11:00

Seismic Design and Dynamic Response of Precast Moment Frame System with Various Mechanical Splices; Deuckhang Lee (Korea)
Chairman: Donghyuk Jung

SESSION M2E

Room 206-207

10:30 – 11:00

Wind Effect and Wind Resistance Design of Tower Structures; Qingshan Yang (China)
Chairman: Thomas Kang

KEYNOTE LECTURES (08/25)

SESSION T1B

Room 202

09:30 – 10:00

Building an Autonomous Laboratory for Concrete Materials Powered by Observation-Informed Machine Learning; Jae Hong Kim (Korea)
Chairman: Jin-Kook Kim

SESSION T1C

Room 204

09:30 – 10:00

Biopolymer-Based Soil Treatment (BPST): A Nature-Based Solution for Sustainable Geotechnical Engineering; Ilhan Chang (Korea)
Chairman: Yeong-Man Kwon

SESSION T1D

Room 205

09:30 – 10:00

Reframing PBWD: New Research Findings and Advances in Computational Methods;
Thomas Kang (Korea)
Chairman: Deuckhang Lee

TECHNICAL PROGRAM

Wind and Structures

Session: M4D	13:30 – 15:10	Room: 205	08/24
Session Title: Wind Engineering, Aerodynamics and Structural Performance Chairman: Francesco Ricciardelli			
Comparative Study of Neural Network Prediction Accuracy for Different Roof Shapes; Haruka Sekiguchi *, Kim Yong Chul [0021]			
Numerical Investigation of Vortex-Induced Vibration Mitigation through Inelastic Base Rocking; Min Kyu Kim*, Hamidreza Alinejad, Thomas Kang [0093]			
Wind Response Analysis and Loading Tests for a High-rise Seismically Isolated Building Considering Creep Behavior of Lead Rubber Bearings; Ken Ishii*, Masaru Kikuchi, Keisuke Tobisawa, Kenta Nagahiro, Nobuyuki Ogino [0057]			
Wind-wave-current coupling response analysis of floating offshore wind turbines; Qingshan Yang* [0152]			
Research on wind turbine wake dynamics and cooperative control; Tian Li* [0154]			
A data-driven method for damage detection of wind turbine blades; Abdollah Malekjafarian* [0158]			
Session: M5D	15:30 – 17:00	Room: 205	08/24
Session Title: Performance of Elements under Various Loading, Construction and Analysis Scenarios Chairmen: Thomas Kang, Min Kyu Kim			
Wind Pressure Characteristics of Double-Arched Roof Buildings with Different Entrance Openings; Hansol Lee*, Thomas Kang [0104]			
Effects of Pressure Tap Density and Layout on Response Estimation in HFPI; Sol-Gi Eun*, Thomas Kang [0101]			
Comparative Evaluation of Facade Modeling Approaches for Tall Building Wind Response Analysis; Juhee Lee*, Hamidreza Alinejad, Thomas Kang [0103]			
Trilinear Backbone Modeling of Coupling Beams for Performance-Based Wind Design of Tall Buildings; Seonhyeong Kim*, Thomas Kang [0094]			
Influence of Sheath Quantity on Blast Response of Unbonded PT Panels; Hyeon Sik Choi*, Thomas Kang [0102]			
Grout-Filling Efficiency and Leakage Tendency of Grouted Extruded-Strand Tendons; Yechan Sung*, Thomas Kang [0096]			
Friction Characteristics and Critical Damage Loads in Grouted Extruded-Strand (GES) Tendons for Nuclear Containment Buildings; Bin Dockko*, Thomas Kang [0095]			

TECHNICAL PROGRAM

Geomechanics and Engineering

Session: M3D	11:00 – 12:30	Room: 205	08/24
Session Title: Geomechanics for Sustainable and Climate-Resilient Infrastructure I			
Chairmen: Yeong-Man Kwon, Minhyeong Lee			
Assessment of Surface Erosion Resistance and Long-Term Scour Behavior of Embankment Soils Treated with Biopolymer and EICP; Suhyuk Park*, Dongcheon Lee, Ilhan Chang [0140]			
Enhancement of agar gum treated sand by crosslinking with calcium compounds; Jaehun Kim*, Yeongman Kwon [0118]			
Numerical Simulation of CO₂ Injection and Two-Phase Flow in Sub-Seabed Sediments; Sokpheanika Chea*, Chul-Whan Kang, Gye-Chun Cho [0123]			
Radial horizontal well injection for chemical stabilization and geotechnical response of heavy metal contaminated soils; Gi-Yun Kim*, Junhyeok Yeom, Ilhan Chang [0121]			
Mechanical Performance of Biopolymer-Treated Dredged Clay and Sand for Wetland Restoration and Beach Nourishment; [Video] Jinwoo An*, Jorge Pena Robles, Yong Je Kim, Boo Hyun Nam [0175]			
Session: T2C	10:00 – 11:40	Room: 204	08/25
Session Title: Engineering Behavior of Geomaterials			
Chairman: Junghee Park			
Effect of titanium anode surface coatings on soil electrodeposition performance; Jaeho Cha*, Yeongman Kwon [0110]			
Introduction to Biogeotechnics and Potential Applications of Microbially Induced Carbonate Precipitation for Sand Surface Treatment; Sojeong Kim*, Jinung Do [0024]			
Influence of clay content on electrodeposition behavior in sand–clay mixtures; Sangik Park*, Yeongman Kwon [0126]			
Characterization of Soil Properties under Non-Uniform Mixing Conditions in Soil Conditioning; Jongwon Woo*, Joohyun Park, Gye-Chun Cho [0141]			
Prediction of Hydraulic Conductivity of Compacted Bentonite Using Elastic Wave Characteristics Based on Biot’s Model; Jun Sang Yu*[0120]			
P-y Characterization of Tripod Micropiles in Sand; [Video] Meron Alebachew Mekonnen*, Jin-Tae Han, Yoonah Kim [0018]			
Session: T3B	12:40 – 14:10	Room: 202	08/25
Session Title: Remote Sensing and Geophysical Characterization of ground			
Chairman: Suhyuk Park			
Forensic Investigation of Ground Settlement at Gimpo Airport Using SBAS-InSAR and PS-InSAR; Sunil Cha*, Inyoung Lee, Lang Fu, Taeyong Park, Changmin Han, Hyungjoon Seo [0032]			
Experimental study for the electric resistivity survey in sandy soil with double anomalies; Doyeon Lee*, Gye-Chun Cho [0133]			
Depth-dependent in-situ void ratio: Electromagnetic assessment; Juna Lee*, Junghee Park [0139]			
Analysis of EMP Wave Attenuation According to Ground Type in the Construction of Underground Data Center; Sunil Cha*, Inyoung Lee, Lang Fu, Taeyong Park, Seokmin Kim, Soo-Ho Chang, Hyungjoon Seo [0035]			
Method for predicting pore pressure response from cyclic triaxial tests; Voltaire Anthony Corsino*, Tae-Eon Kim, Soo-Woong Choi, Hyeong-Soo Kim, Tae-Woong Park, James Vincent Reyes, Hyeong-Joo Kim [0107]			
GeoAI-Enabled Remote Sensing Framework for Shoreline Change Forecasting at Pensacola Beach, Florida; [Video] Md Saffiquzzaman Chowdhury*, Md. Ali Ahnaf Abid Mayukh, Yong Je Kim, Jinwoo An, Boo Hyun Nam [0179]			
Comparative Machine Learning and Explainable Flood Susceptibility Mapping in Humphreys County, Tennessee Using AHP and SHAP; [Video] Md. Ali Ahnaf Abid Mayukh*, Md Saffiquzzaman Chowdhury, Yong Je Kim [0183]			

TECHNICAL PROGRAM

Session: T4B	14:30 – 16:00	Room: 202	08/25
Session Title: Soil-structure interaction and underground space Chairman: Tae-Min Oh			
Performance of Ordinary and Encased Granular Piles in Layered Soft Clays: Experimental and Numerical Insights; Shaïd Yousuf*, Narendra Kumar Samadhiya [0056]			
Numerical Analysis of Soil–Pipe Interaction around Large-Diameter Corrugated Steel Pipes under Eccentric Loads; Dukwhi Hwang*, Gye-Chun Cho [0106]			
Thermal Response Analysis of Fractured Rock Surrounding a Liquid Hydrogen Lined Rock Cavern; Novia Chairun Nisa*, Gyu-Hyun Go, Min-Jun Kim, Jong-Won Lee, Eui-Seob Park, Yong-Bok Jung, Myungsun Kim [0116]			
Effects of variations in standoff distance and abrasive flow rate on abrasive waterjet drilling performance; Sejin Park*, Hyun-Joong Hwang, Gye-Chun Cho [0119]			
Session: T3C	12:40 – 14:10	Room: 204	08/25
Session Title: Geomechanics for Sustainable and Climate-Resilient Infrastructure II Chairmen: Yeong-Man Kwon, Minhyeong Lee			
Behavior of Soils Treated with CaCl₂-Crosslinked Citrus Pectin; Young-Guk Kim*, Yeongman Kwon [0115]			
Application of Viscoelastic Hydrogel Rheology to Geotechnical Characterization of Treated Sandy Soil; Dong-Yeup Park*, Minshik Rho, Minhyeong Lee, Gye-Chun Cho [0137]			
Comparison of Seismic and Simplified Sinusoidal Loading under Cyclic Simple Shear Condition: Energy-based method; Seokhwan Jeong*, Jongchan Kim [0135]			
Seismic-Induced Soil Densification: Implications to Slope Stability in Active and Passive Continental Margins; Junbong Jang*, Erdina Tyagita Utam, Uri Ten Brink [0090]			
Small-Strain Dynamic Properties of Sand Containing Soft Viscoelastic Inclusions; Dong-Hwa Noh* [0186]			
Towards soil-specific classification boundaries: Physics-centered and data-aided assessment; Chaewon Park*, Junghee Park [0122]			
Influence of Mixture Design on the Mechanical Performance of Ceramic Foam for Seismic Foundation Isolation; Kamil Bekir Afacan*, Haldun Kurama, Semra Kurama, Zahide Bayer Öztürk [0060]			
Session: T4C	14:30 – 16:00	Room: 204	08/25
Session Title: Advances in Deep Geological Disposal of High-Level Radioactive Waste Chairmen: Chang-Ho Hong, Ji-Won Kim			
Laboratory investigation into the evolution of normal stiffness in granite fractures subjected to incremental shear offsets; Seong Jun Ha*, Jin-Seop Kim [0022]			
Performance-based evaluation of bentonite subjected to long-term shotcrete-groundwater interaction: implications for repository backfill design; Jiri Stastka*, Yohan Cha, Jin-Seop Kim, Radek Vasecek, Milan Zuna [0039]			
Realistic Moisture Behavior Derivation of Bentonite under High Temperatures: A Multiphase Thermo-Hydraulic Simulation of the HotBENT Experiment; Seo-Yeon Cho*, Sunggil Jo, JinWon Seo, Min-Seok Kim, Gyosoon Kim, Mi-Seon Jeong [0040]			
Current Status of the Demonstration of Disposal Tunnel and Pit Layout Methods in Sedimentary Rocks at the Horonobe URL, Japan; Akira Hayano*, Kazuhei Aoyagi, Hiroaki Murakami and Tomonori Tamura [0038]			
Manufacturing and Quality Assessment of Buffer Blocks and Disposal Canisters; Yonghyeon Lee*, Jae-Deuk Kim, Young-Ho Lee, Jin-Seop Kim [0043]			
Numerical assessment of interfacial Hydro-Mechanical behaviour governed by water retention and hydraulic properties contrasts in a Repository Sealing System; Jung-Tae Kim*, Jin-Seop Kim, Changsoo Lee, Carlos Plúa, Ji-Won Kim [0045]			

TECHNICAL PROGRAM

Implementation of a 3-phases Phase Field Model into a Numerical Simulation Model for Localized Corrosion of Copper Canister; Pilhyeon Ju*, Kwanil Chae, Nakkyu Chae, Samuel Park, Richard I. Foster, Sungyeol Choi [0048]

A Comparative Structural Analysis of Hydrothermally-Treated Bentonil-WRK; [Video]

Musfika Rahman*, Muhammed Rashik Mojid, Kyung Jae Lee, Taehyung Park, Jin-Seop Kim [0013]

Geomechanics and Engineering (Poster)

Effect of Montmorillonite on Gelation Behavior of Crosslinked Viscoelastic Biopolymer;
Minshik Rho*, Dong-Yeup Park, Minhyeong Lee, Gye-Chun Cho [0144]

End-Bearing Behavior of Pile Groups Considering Soil-Wedge Interaction;

Jin-Woo Im*, Jun-Ho Moon, Won-Hyeong Lee, Young-Uk Kim [0063]

Dynamic response of submerged floating tunnels at shore connection via small-scale model test and numerical analysis; Joohyun Park*, Gye-Chun Cho [0127]

TECHNICAL PROGRAM

Membrane and Water Treatment

Session: M4E	13:30 – 15:10	Room: 206-207	08/24
Session Title: Artificial Intelligence and Innovative Materials for Smart Water Treatment			
Chairman: Chanhee Boo			
Definition of Allowable Water Age for Drinking Water in Distribution Networks and Real-Time Residual Chlorine Prediction Using Soft Sensor; Dooil Kim* [0169]			
Synthesis and performance characterization of thermo-responsive PES/Poly (AAm-co-AN) membranes; Yeit Haan Teow*, Abdelrahman K.A. Khali, Ismail Almanassra, Mohamed Ammar Abo Jouma, Mohd Sobri Takriff [0004]			
Artificial Intelligence Agents based on Language Models for Electrochemical Water Desalination; Moon Son* [0166]			
Additive modification on polyvinylidene fluoride membrane for removal of methylene blue dye via vacuum membrane distillation process; Yeit Haan Teow*, CHONGYU CHIU, KAM SHENG LAU, ZHENG HONG CHANG, SHU-YII WU [0003]			
AI-Integrated Optimization of Wastewater Treatment Plant Operations Based on Microbial Activity and Settleability; Kwanho Jeong* [0200]			
Development of Ultraviolet Side-Emitting Optical Fibers for Preventing Biofouling on Reverse Osmosis membranes; Hojung Rho* [0171]			
From Mixed-Matrix to Surface-Immobilized MOF Composite Adsorption-Filtration Membranes for Efficient Heavy Metal Removal; Jaewoo Lee*, Dharma Raj Kandel, Prem Gaudel [0020]			

ECO UP Poster

Session: M5E	15:30 – 17:00	Room: 206-207	08/24
Session Title: Smart Water Technologies and Artificial Intelligence Applications			
Comparative Analysis of Renewable Energy Technologies in South Korea and Australia; Yejun Na, SongYeon Kim			
AI-Driven Integrated Smart Water Grid System to Overcome Water Crisis in the Semiconductor Industry; Hosun Yu, YeoJung Jo, TaeSeo Jeong			
A Comparative Study of Waste Management Systems in South Korea and Australia; Suhong Lee, Jiwoo Kim, Nayeon Park, Seoyeon Lee			
Air Pollution Monitoring and Forecasting; Jeong Suin, Chai Xin Fen, Minji Kim			
Restoring Our Nature: A Comparative Study in AUS & KOR; Curie Kim, Dayoon Lee, Jiwon Han			
Locally-Sourced Substrates for Constructed Wetlands: Sustainable NbS Design with Smart Monitoring in Indonesia; Seowon Jeong, Ahyeon Han			
Integrating Appropriate and Advanced Technologies for Septic Tank Systems; Subin Yang, Hyunkyung Kim			
IoT-Based Water Level and Quality Monitoring for Appropriate-Technology Rainwater Tanks; Dahyun Lee, Heejae Lee, Sohee Cho			
Data in Action: Smart Water Quality Monitoring and Field Diagnosis; Yesol Han, Youchan Han, Jeongwon Kim			

TECHNICAL PROGRAM

Nano Research

Session: M4A

13:30 – 15:10

Room: 201

08/24

Session Title: Recent Advancements in Nano Research and Multiscale Structures in the Era of Artificial Intelligence and Computing

Chairman: In Ho Cho

Scientific Artificial Intelligence for Nanoscience and Nanoengineering; In Ho Cho* [0047]

AI-Driven Inverse Design of a Multi-functional Nano-surface Enabled by Parallel Evolution Strategies; In Ho Cho*, Dima Abuolien [0165]

Surrogate assisted efficiency prediction and optimization in Ga-doped ZnO based functionally graded thermoelectric device; Shardul Rai*, Abhishek Tewari, Ankit Gupta [0155]

A Unified Nonlocal Quasi-Refined Plate Framework for Stochastic Free Vibration of Geometrically Imperfect Porous Functionally Graded Nanoplates resting on Nonlinear elastic Foundations;

Ankit Gupta*, Arun Kumar [0168]

Surface Fluorination of Copper Nanoparticles for Enhanced High-Temperature Oxidation Resistance; Jae-Ho Kim*, Susumu Yonezawa [0030]

Evaluation of Interfacial Mechanisms in Cement Composites Incorporating APTES-Modified Cellulose Nanofibrils; Thomas Kang*, Hyang-Gi Jo, Woosuk Kim [0097]

Tunable thermal insulation and mechanical properties of graphene oxide/silk fibroin bionanocomposite films; [Video] Taehee Kim*, Truong Nhut Huynh, Hyeonho Cho, In Ho Cho, Sangmin Lee, Jin-Gyun Kim, Sunghan Kim [0079]

Video Presentation

Experimental determination of the Mode II Interlaminar Fracture Toughness of Unidirectional CFRP Composite; [Video] Eva Kormaníková*, Monika Hanecakova, Peter Sabol [0016]

Rainfall Simulation and Reliability Assessment of Alkali Activated Jute Geo - composites for Slope Stability; [Video] shaik Bajamma*, Payel Chaudhuri [0080]

Polymer Ceramic Hybrid Composites from Jute and Alkali-Activated Binder; [Video] Shaik Bajamma*, Payel Chaudhuri [0091]

Comparative Random Vibration Analysis of Pneumatic–Mechanical Isolators Using Circular and Elliptical Cross-Section Helical Springs; Saviour Shedamang*, Hou Wenqi [0007]

Concrete Construction

Session: T2B

10:00 – 11:40

Room: 202

08/25

Session Title: Advanced Resilience Evaluation of Structural Materials and Systems

Chairmen: Hyo-Gyoung Kwak, Jin-Kook Kim

Nondestructive Assessment of Early-Age Freezing Effects in Cementitious Materials by Electrochemical Impedance Spectroscopy; Young Hwan Bae*, Hong Jae Yim [0068]

Carbonation-Induced Structural Build-Up of Fresh Cement-Based Materials Using Monoethanolamine Solution; Seung Mo Kim*, Han Seongho, Jae Hong Kim [0092]

Numerical Approach to the Flexural Behavior of U-Shaped GFRP Rebar; Ju-young Hwang*, Howon Kim [0128]

Compressive Buckling Behavior of High-Strength Welded Cruciform Sections Considering Welding Residual Stress; Ga-Yoon Park*, Soo-Chang Kang, Dong-Seop Lee, Jin-Kook Kim [0088]

ANN-Based Prediction of P-I Diagram of RC Frame Members; Hyunseung Chung*, Hyo-Gyoung Kwak [0148]

Information Value Estimation Based on Reliability Updating for Deteriorating Structures; Sunyong Kim*, Baixue Ge [0033]

TECHNICAL PROGRAM

Concrete Structures: Monitoring and Performance

Session: M3B	11:00 – 12:30	Room: 202	08/24
Session Title: Concrete Materials and Structural Performance			
Chairman: Tian Li			
Measurement methods for analysis of strain distributions in discontinuity regions of reinforced concrete; Tobias Hartung*, Klaus Holschemacher [0042]			
Early-age compressive strength estimation of GGBS concrete based on maturity model considering the effect of curing temperature; Ho-Fai Wong*, Ying Liu, He-Xin Zhang, Sung-Hei Luk, Zhen Guo, Jian-Hong Xu, Julia Zyree Go, Chun-Yin Chow, Chi-Kin Ip [0082]			
Integration of recycled cement paste into cementitious systems: A comprehensive review; Sungsik Choi *, Naru Kim, H.K. Lee [0023]			
Digital twin of bridge vehicle load spectrum from WIM data via multi-model joint prediction of statistical parameters; Yuanyuan Gao* [0019]			
Field Assessment of Exposure Conditions and Deteriorations in Precast Concrete Culverts; Saugat Humagain*, Prabir Kumar Sarker, Faiz Uddin Ahmed Shaikh, Daksh Baweja, Peter Coughlan, Erica Smith [0177]			
Synergistic effect of wollastonite microfibre and granite waste on the thermal conductivity and fire resistance behaviour of sustainable concrete; Ajay K Mandrawalia*, Arun Gaur [0064]			

Structural Monitoring and Maintenance

Session: M4B	13:30 – 15:10	Room: 202	08/24
Session Title: Advances in Structural Health Monitoring and Prognostics			
Chairman: Myoungsung Choi			
Knowledge graph-guided reasoning for 3D bridge component segmentation from UAV imagery; Jonghwa Hong*, Sung-Han Sim [0130]			
Physics-Informed Hybrid Anomaly Detection for Bridge Health Monitoring under Freezing Temperatures; Seunghoo Jeong*, Young-Soo Park, Kyoung-Chan Lee, Sung-Han Sim [0143]			
Acoustic Emission Source Localization in Concrete Structures using Modified Stockwell Transform-based CNN Architecture; JONGHOON WEON*, Robin Kim [0112]			
Member-Level Damage Identifiability and Convex Solution-Space Bounds for Rank-Deficient Static Displacement Measurements in Truss Structures; Junhwa Lee*, Kyungwon Kim [0162]			
Deterioration Assessment and Remaining Useful Life Prediction of Damping Rubber Bearings based on Stiffness Variation; Minwoo Chang* [0109]			
Session: M5B	15:30 – 17:00	Room: 202	08/24
Session Title: AI for Resilient Civil Infrastructure (AI+KCIR Center)			
Chairman: Seunghee Park			
Electrically Induced Crack Healing in CNT-Cementitious Composites; DANIEL MELESE TARIKU*, Solmoi Park, Jinho Bang [0151]			
Experimental Evaluation of Buildability Using Estimated Static Yield Stress in 3D Concrete Printing; Kiyeol Kim*, Myoungsung Choi [0161]			
Development and Seismic Performance of a Bidirectional Hybrid Self-Centering Damper; Rana Naveed Ahmad*, Saiyin Qian, Mohammad Mahdi Javidan, Seunghee Park [0163]			
Physics-Governed Agent for Subgrade Modulus Diagnosis; Xiangyang Li*, Shuju Jing, Dongyoung Ko, Seunghee Park [0147]			
Probabilistic Trajectory Prediction-Based Evaluation of Pedestrian Future Conflicts at Non-Signalized Intersections; Tengfeng Lin*, Zhixiong Jin, Hwasoo Yeo, Inhi Kim [0164]			

TECHNICAL PROGRAM

Ocean Systems Engineering

Session: M3A	11:00 – 12:30	Room: 201	08/24
Session Title: Advanced Numerical Methods and Structural Engineering Chairman: Phill-Seung Lee			
Investigation of open boundary treatment in SPH under high acoustic impulse; Yoon Sung Jeong*, Phill-Seung Lee [0041]			
Re-parameterization for Significant-Digit Preservation in Thin Solid-Shell Elements; JeongHwan Yeon*, JaeHyun Sung, Phill-Seung Lee [0131]			
A stress-recovery based displacement correction for 4-node quadrilateral elements; Gyeonggeun Bong*, Phill-Seung Lee [0176]			
Effect of Impact Severity Parameters on the Post-Impact Response of Axially Pre-Loaded Hollow Steel Tubular Members; Nirmal Rakeshbhai Ravaliya* [0145]			
A Physics-Informed Deep Learning Framework for Structural Optimization of Anisotropic Materials; Dung Tran*, Thanh Thien Binh, Hyungmin Jun [0178]			

Computational Design

Session: M5C	15:30 – 17:00	Room: 204	08/24
Session Title: Advanced Computational Methods for Structural Optimization and Digital Chairmen: Zhen Sun, Robin E. Kim			
Application of Artificial Intelligence for Bridge Deterioration Evaluation Based on RGB Point Clouds; Chia-Ming Chang*, Yen Kuan, Tsung-Wei Hsieh [0011]			
MATLAB Code Development for Topology Optimization of Multi-Material Structures Using a Stress-Based BESO Method; Hongin Kim*, Donghyuk Jung [0156]			
A Hierarchical Optimization Approach to Prefabricated Bridge Assembly; Hajin Ye*, Gyumin Lee, Junhwa Lee, Sung-Han Sim [0159]			
Advanced Forensic Analysis of Concrete Structures with Vision and AI Technologies; Robin Kim* [0134]			
Session: T3D	12:40 – 14:10	Room: 205	08/25
Session Title: Multiphysics Modeling and Forensic Evaluation of Composite Systems in Structural, Geotechnical, and Hydraulic Engineering - Part I Chairmen: Hyungjoon Seo, Seungjun Kim			
Analysis of Consolidation Settlement According to Reclamation Sequence Using SBAS-InSAR: A Case Study of Masan Marine New Town; Hyungjoon Seo*, Inyoung Lee, Taeyong Park, Sunil Cha, Euihyun Kim [0028]			
Thermal Expansion Monitoring of Bridges Based on Combination of Terrestrial Laser Scanning and Satellite InSAR Measurements; Hyungjoon Seo*, Lang Fu, MinSung Hong, Yubin Kim [0029]			
Forensic Displacement Assessment of a Full-Scale Steel Transmission Tower Using Multiple UAVs; Sanggi Jeong*, Arum Jang, Young K. Ju [0069]			
Investigation of HEMU-based Reverse Engineering for Estimating Design Information of Transmission Tower; Seongbin Ryu*, Pyounghwa Kim, Seungjun Kim [0089]			
Geotechnical Forensic Modeling of Pipeline Failure Considering Relative Compaction: Coupling Field Testing and Numerical Analyses; Younggeun Yoo*, Dong Geon Son, Hyunmuk Cho, Jong-Sub Lee [0076]			
Machine Learning Surrogate for Particle Size-Dependent Expansion of Steel Slag in Cement Composites based on the Analytical Model; Seunghoon Seo*, Ohseong Lee, Goangseup Zi [0058]			
Modified Impact-Echo Testing of Liner-Plate-Backed Concrete in Nuclear Containment Buildings; Hyun Gyu Park*, Sang Min Lee, Thomas Kang [0100]			

TECHNICAL PROGRAM

Session: T4D

14:30 – 16:00

Room: 205

08/25

Session Title: Multiphysics Modeling and Forensic Evaluation of Composite Systems in Structural, Geotechnical, and Hydraulic Engineering - Part II

Chairmen: Changhyun Jun, Yong-Hoon Byun

IoT-based acoustic sensing for estimating raindrop size distribution parameters;

Seunghyun Hwang*, Seoyeong Ku, Jongjin Baik, Changhyun Jun [0059]

PLS-SEM-Based Comparison of Hydrological Cycle Characteristics Between the Chungju and Soyanggang Dam Basins in Korea; Jeonghyeok Ma*, Chulsang Yoo [0050]

A Framework for Integrated GGI Retrofitting Based on the Propagation of Localized Inflows to Minimize Urban Flooding; Hyeon Woo Jung*, Hyunjung Kim, Changhyun Jun, Donghwi Jung [0070]

Field Evaluation of Soil Cover Effects on Load Responses of Buried Rigid Pipes;

Dong Geon Son*, Younggeun Yoo, Hyunmuk Cho, Jong-Sub Lee, Yong-Hoon Byun [0066]

Deep Learning Prediction of Pile Bearing Capacity from Dynamic Load Test Measurement;

Wanhuk Seo*, Tae Sup Yun [0052]

GIS-Based Preliminary Site Selection for Small Modular Reactor in Thailand;

Methawee Nakkam*, Eric Yee [0015]

TECHNICAL PROGRAM

Earthquake and Structures

Session: M3C	11:00 – 12:30	Room: 204	08/24
Session Title: Hazard Assessment and Earthquake Risk Analysis Chairman: Qingshan Yang			
A study on the effectiveness of spatial interpolation of ground motion intensity measures based on two-step gaussian process regression; Keigo Tsukioka*, Naoyasu Iwata, Yoshihisa Maruyama [0025]			
Residual Seismic Performance of Damaged Slender Reinforced Concrete Walls; WEN-I LIAO* [0008]			
Time Series Forecasting of Building Seismic Performance Using Machine Learning; SUNG HEI LUK *, Ho Fai Wong [0044]			
Analysis of water pipeline damage caused by the 2024 Noto Peninsula Earthquake using remote sensing technology; Kazuki Karimai*, Wen Liu, Yoshihisa Maruyama [0046]			
Revisiting Basin Effects: The Role of Input Motion Intensity in 2D Site Response; Kamil Bekir Afacan*, Ebru Civelekler [0087]			
Session: M3E	11:00 – 12:30	Room: 206-7	08/24
Session Title: China-Korea-Kazakhstan Joint Seminar on Green Construction and Intelligent Disaster Prevention Chairmen: Dichuan Zhang, Jianwei Chen			
Development of Lightweight Engineered Cementitious Composites for Multifunctional Seismic Retrofitting on Unreinforced Masonry Structures Using Industry Byproducts; Dichuan Zhang*, ChukwuMike Mike Ogwumeh, Zhanbolat Artyk, Chang-Seon Shon, Jong Kim [0167]			
Simplified Design Approach for Precast Concrete Shear Wall Systems Based on Group Coupling Concept; Won-Jun Lee*, Seon-Hoon Kim, Deuckhang Lee [0114]			
Design Review and Long-term Thermo-mechanical Behavior of GSHP Energy Piles; Wei Zhang*, Jianwei Chen [0012]			
Hybrid Geogrid–J-Pin Reinforcement for GeoBarrier System; Jong Kim*, Alfredo Satyanaga, Sungwoo Moon, Dichuan Zhang [0170]			
Seismic responses of two types of single-layer reticulated shells in different soils Considering gable walls; [Video] Wenpeng Che*, Zhenyang Sun, Ning Wang, Wei Ming [0078]			
Analytical and Experimental Study of a Novel Friction-Sliding Isolation Bearing; [Video] Linlin Bai*, Xiaosheng Song, Wenpeng Che, Lu Gao, Ning Wang, Liutao Han, Tiankuo Wang [0083]			
Flexural behavior of a new green stainless-steel corrugated plate for tunnel structural reinforcement; [Video] Shuobiao Li*, Wenqi Ding, Zhanwen Wang, Wei Ming, Jianwei Chen [0086]			

TECHNICAL PROGRAM

Session: M4C	13:30 – 15:00	Room: 204	08/24
Session Title: Key Engineering Performances of Structural Components for Better Seismic-Resistant Systems Chairmen: Deuckhang (DK) Lee, Insub Choi			
Polarization-aware GPR imaging for enhanced detection of shear reinforcement; Hajin Choi*, Taemin Lee [0160]			
Effects of Ground Motion Characteristics on the Nonlinear Seismic Response of Base-Isolated Structures in Low-to-Moderate Seismicity Regions; Dong-Hyeon Shin*, Hyung-Sun Jeon [0055]			
Local Damage Heatmap-Based Global Seismic Demand Estimation of RC Structures Using Convolutional Neural Networks; Minseok Park*, Hayeon Jeon, Seoyoun Lee, Insub Choi [0113]			
Effects of Structural Material Selections on the Embodied Carbon of Building Structures; Yu-Jun Chen*, Yi-Hsuan Tu, Chih-Jui Huang, Huan-Chih Lin [0010]			
A MATLAB Framework for SIMP-Based Multi-Material Topology Optimization of Reinforced Concrete Structures; Jaehee Choi*, Donghyuk Jung [0153]			
Lateral Cyclic Performance of PC Beam–Column Joints with Dry Connections; Seon-Hoon Kim*, Won-Jun Lee, Deuckhang Lee [0150]			
Session: M5A	15:30 – 17:00	Room: 201	08/24
Session Title: Structural Seismic Performance and Vibration Control Chairman: Phill-Seung Lee			
Development of Knife-plate Connected Seismic Stud Columns; Po-Chien Hsiao* [0017]			
Discussion on the vibration isolation effect of 1-D layered periodic structures; Wen-Shinn Shyu* [0026]			
Evaluation of Resonance Behavior in Full-Scale Pedestrian Bridge Using ORSST with a Resonance-Amplified Reduced Soil Model; Shih-Yu Chu*, Qi-Yang Liao, Chan-Jung Kang, Hsueh-Hung Fang, Ming-Hsiang Shih, Martin Ghienne [0049]			
Modeling and experimental verification of phase-control active tuned mass dampers applied to MDOF structures; Yong-An Lai* [0085]			
Session: T2D	10:00 – 11:40	Room: 205	08/25
Session Title: UTFORSK Project Seminar on Development of Academic Collaboration in Sustainable Built-Environment with Digital Technology Chairmen: Mohamad Mustafa, Deuckhang (DK) Lee			
Prediction of Interlayer Bond Failure in 3D Printed Concrete Using Machine Learning; Jaewon Lim*, Thomas Kang [0099]			
New Energy Harvesting and Storage Systems for Buildings; Yong Kang Chen*[0172]			
Post-Yield Behavior of Composite Sandwich Panels with Variable Core Thickness; Hussein Maaitah*[0180]			
Towards a Structural Energy Fuselage: Integrated Hydrogen Energy Storage, Solid Oxide Fuel Cells, and Distributed Jet Propulsion for Future Aircraft; Mohamad Y. Mustafa*[0181]			
From the Arctic to Seismic Zones: Real-World Lessons in Vibration-Based Structural Health Monitoring; Harpal Singh*[0182]			
Development and Predictive Modeling of Nano-Enhanced Biobased Phase Change Materials for The Arctic Cold Climates Applications; Samad Ali Taj*			
Development and Evaluation of a hybrid Solid Oxide Fuel Cell based Power generation system; Muhammad Uzair Azhar* [0184]			
Investigating CCA-Treated Public Infrastructure and Potential Exposure Risks in Erie, Pennsylvania, USA.; [Video] Hwidong Kim*, Haleigh Manning [0084]			

TECHNICAL PROGRAM

Poster Presentation

Exhibited in the 2nd Floor Lobby throughout the conference (August 24–25)

Surface modification of cathode active materials for lithium-ion batteries using a new solid fluorinating agent; Shinya Urano*, Jae-Ho Kim, Susumu Yonezawa [0031]

Enhancement of Metal–Resin Adhesion by Surface Fluorination Using F₂ Gas: Effects of Fluorine Pressure on Fe/PET Bonding; Ryosuke Inagaki*, Masanari Namie, Jae-Ho Kim, Susumu Yonezawa [0034]

High-Performance Photocatalytic Glass Fiber Filters Prepared by Precision Fluorination and TiO₂ Film Deposition; Soma Hayakawa*, Jae-Ho Kim, Susumu Yonezawa [0036]

Creation of zirconium silicotungstic oxide nanorod crystals using electron beams; Jedeok Kim* [0077]

End-to-end Framework Towards Digital Twinning of Built Facilities with Zero-Shot and Multi-Modal Transformers; Minju Kim*, Gyueun Lee, Dongmin Lee, Hunhee Cho [0061]

Effect of Montmorillonite on Gelation Behavior of Crosslinked Viscoelastic Biopolymer; Minshik Rho*, Dong-Yeup Park, Minhyeong Lee, Gye-Chun Cho [0144]

End-Bearing Behavior of Pile Groups Considering Soil-Wedge Interaction;

Jin-Woo Im*, Jun-Ho Moon, Won-Hyeong Lee, Young-Uk Kim [0063]

Dynamic response of submerged floating tunnels at shore connection via small-scale model test and numerical analysis; Joohyun Park*, Gye-Chun Cho [0127]