

ACF Special Sessions & Parallel Sessions

Nagataki Special Session 1		
Time : Oct. 15 (Thu) 13:00–14:30		Venue : International Conference Hall
#	Authors	Title
	Takeshi Yamamoto	Background of the session and introduction of Prof. Nagataki
157	Takeshi Yamamoto	API Method for Rapid Evaluation of the Pozzolanic Activity of Fly Ash
140	Sachie Sato and Seiichi Sudo	Non-Destructive Evaluation of Heat Absorption Temperatures in Concrete Subjected to High-Temperature Heating Using Dielectric Measurement
155	Shinichi Miyazato	Implementation Research of Concrete Mixed with Fly Ash in Hokuriku region
136	Kenta Hoshi, Ryuichiro Kuga, Hiroaki Mori	Effects of Fly Ash Physical Properties on Mortar Flowability
126	Mayuko Hirata, Haruki Momose, Tetsushi Kanda, Daijiro Tsuji, Masaro Kojima, Kei-Ichi Imamoto, Chizuru Kiyohara	Shrinkage Crack Resistance of High-Volume Blast-Furnace Slag Concrete
Okamura Special Session 1		
Time : Oct. 15 (Thu) 14:45–16:15		Venue : International Conference Hall
#	Authors	Title
	Jenn-Chuan Chern	Opening Address
	Kazumasa Ozawa	On the Story behind the Development of Self-Compacting Concrete
	Chao-Chang Liao	Use of SCC in the Transportation Systems of Taiwan
	Yin-Wen Chan	Development and use of SCC in Taipei Twin Towers
	Jui-Chen Wang	Use of SCC in High Technology Factory Construction
	Somnuk Tangtermsirikul	Development and Application of Self-Compacting Concrete in Thailand

1A Topics : Low-Carbon Binders, Eco-cement, and Green Concrete Time : Oct. 15 (Thu) 16:15–17:30 Venue : Alexander Hall		
#	Authors	Title
1	Tien Peng	Responsible Sourcing Scheme for Concrete
20	Yu-Min Chang, Ying-Nung Chang, Shu-Ken Lin, Chung-Hao Wu and Huang Hsing Pan	Research on the Engineering Properties of Biomineralized Waste Tire Rubber Fine Aggregate Concrete
57	Yu-Wen Chiu, Chung-Wen Lin, Ming-Fu Wu and Wei-Dong Syu	Sulfate Resistance of Portland Limestone Cement in Sulfate-Rich Environments: Effect of Ground Limestone Filler Content
106	Chih-Hsien Chen, Yu-Chung Tseng, Tzu-Chieh Chiu, Huey-Jia Yeh and Ting-Yun Lai	Implementation of Low-Carbon Cement and Concrete Rating Frameworks: Global Trends and Taiwan's Progress
227	Fuwen Zhong, Qiang Yuan and Zonglin Xie	Rheology-Governed Enhancement of Anti-Washout Resistance in Seawater-Mixed Alkali-Activated Slag Paste via In-Situ Polymerization
1B Topics : Concrete Durability Time : Oct. 15 (Thu) 16:15–17:30 Venue : Locke Hall		
#	Authors	Title
5	Kang-Shiun Huang, Shih-Wei Cho and Chung-Chia Yang	Quantitative Evaluation of Slag Effects on Chloride Migration in Matrix and Interfacial Transition Zone
83	Keisuke Matsumoto, Yanyue Qin, Yuya Takahashi, Yuto Fujikawa, Yoshikazu Ohara, Kazunori Miyanaga, Tatsuki Takahashi and Hideto Kida	Wet Fatigue Characteristics of High-Strength Concrete through Underwater Bending Fatigue Test of Small-scale RC Beams
86	Hsin-Hsiang Hsu, Kuo-Shen Jao, Sheng-Hsueh Lin, Ming-Ku Chen, Ping-Hung Chen, Tien-Yu Chen and Fu-Hsiung Huang	The Future of Smart Bridge Systems: A Case Study of the Yugang Viaduct Bridge on National Freeway No. 1 in Taiwan
179	Chih-Hui Tseng, Wen Po Hsun and Yin-Wen Chan	Behavior of Sulfate Deterioration and Pore Transport Properties of Limestone Cement Materials
226	Zonglin Xie and Qiang Yuan	BOND MECHANISM OF ORGANIC ADHESIVE AND CEMENT-BASED MATERIALS

Nagataki Special Session 2		
Time : Oct. 16 (Fri) 09:00–10:30		Venue : Socrates Hall
#	Authors	Title
156	Kotaro Uchida, Takashi Kawakami, Yoshikazu Akira, Toshinobu Yamaguchi	Strength and durability characteristics of concrete incorporating volcanic glass powder from Shirasu
130	Takato Tsuboguchi and Kozo Onoue	Comparison of Slowly and Rapidly Cooled Electric Arc Furnace Oxidizing Slag Fine Aggregates: Particle Morphology, ITZ Characteristics, and Mortar Strength
127	Shunsuke Tanaka, Hirokazu Kiriya and Konosuke Takahara	Effect of Carbonation Treatment of Recycled Coarse Aggregate on the Drying Shrinkage of Recycled Aggregate Concrete
135	Munenori Yamada, Kohei Eguchi, Hiroshi Kadota, Yukiko Nishioka, Daijiro Tsuji, Yosaku Ikeo and Masaro Kojima	Development of Carbon-Negative Concrete Utilizing CCUS Materials Derived from Demolished Concrete
143	Masashi Shinsugi	Fundamental Study on Strength Development Mechanism in Cement Paste with High Replacement of Cement by CO ₂ -Fixed Sludge Particles
2A Topics : Concrete Volume Stability (Shrinkage and Creep)		
Time : Oct. 16 (Fri) 09:00–10:30		Venue : Archimedes Hall
#	Authors	Title
invited	Petr Havlásek, Vít Šmilauer, Lenka Dohnalová, Pavel Reiterman, and Wen-Cheng Liao	Procedure for robust updating of drying shrinkage of self-compacting concrete
8	Koji Shimabe and Koji Matsumoto	Investigation of the Mechanism of DEF Expansion in Concrete based on Direct Measurements of Aggregates and Aggregate-Paste Interfaces
131	So Goto and Hiroaki Mori	Influence of Natural Zeolite on Shrinkage Cracking Properties of Concrete
169	Hoang Trung Hieu Duong, Grisella Audria Gunawan and Wei-Chien Wang	The Effect of Silica Fume and Accelerators on Mechanical Strength and Drying Shrinkage of High Early Strength Mortar
206	Doan-Binh Nguyen and Wen-Cheng Liao	Application of machine learning methods for predicting total creep of self-compacting concrete

2B Topics : Low-Carbon Binders, Eco-cement, and Green Concrete Time : Oct. 16 (Fri) 09:00–10:30 Venue : Alexander Hall		
#	Authors	Title
71	Van Cuong Tran, Chang-Jun Lee, Islambek Manap, Ji-Hyun Kim and Chul-Woo Chung	Particle-Scale Breakdown Behavior of BOF Slag during Wet Carbonation and Its Effect on CO ₂ Mineralization and Reactivity
81	Phyothant Htein, Fang Zheng and Yuya Sakai	Feasibility of Using Crystalline Low-Quality Sand as a Water-Activated Cement-Free Binder via Solvothermal Pre-Activation
146	Hsi-An Chen and Chun-Tao Chen	Synergistic Densification Mechanism in Limestone Calcined Clay Cement (LC3) Revealed by Statistical Nanoindentation and Chemical Mapping
149	Joseph Lucas and Chun-Tao Chen	Carbon Capture and Engineering Performance of Class F Fly Ash-Activated Carbon Geopolymer Composite Pastes
167	Xiang Hu	Investigation on the stability of vaterite polymorphs under the influence of calcium silicate minerals
219	Karasawa Hideaki	Effect of Water-to-Binder Ratio on Compressive Strength and CO ₂ Uptake in Precast Concrete Products
2C Topics : AI/ML for Design, Analysis, and Predictive Decision-making Time : Oct. 16 (Fri) 09:00–10:30 Venue : Da Vinci Hall		
#	Authors	Title
87	Min-Jeong Cho and Hyeon-Jong Hwang	Reinforcement Learning-based Design Optimization of 3D Space Frames
124	Lin Shang-Hua, Hsu Ci-Xin and Chen Peng-Yu	An Automated Optimization Design System for RC Moment-Resisting Frames Integrating Graph Neural Networks and Particle Swarm Optimization
134	Kiyofumi Nakada, Kaori Nemoto, Naoko Tsuchiya, Naoki Mishima, Koichi Matsuzawa and Tadatsugu Kage	AI-Based Image Classification for Deterioration Assessment of Exterior Finishes in RC Buildings
175	Yu-Kai Wang	An Intent-Routing RAG-Based AI Assistant for Concrete Engineering
184	Ruiqi Ji and Naoshi Ueda	Machine Learning-Driven Prediction of ASR Expansion
201	Hongyuan Guo	Physics-informed neural networks for mesoscale chloride diffusion in concrete

2D			Topics : Concrete Durability
Time : Oct. 16 (Fri) 09:00–10:30			Venue : Raphael Hall
#	Authors	Title	
7	Takashi Sato, Koichi Kobayashi and Ryo Kitagawa	EFFECT OF BICARBONATE ION ON THE WATER TIGHTNESS OF CEMENTITIOUS MATERIALS	
47	Shingo Asamoto, Suzuka Murata and Lam Trong Nguyen	Moisture Uptake and Drying Characteristics of Autoclaved Aerated Concrete with Different Pore Structures	
69	Shuya Sakon, Kiyofumi Nakada, Manabu Kanematsu and Junho Kim	Fundamental Research on Evaluating Wet Conditions of Concrete Surfaces Using ACM-Type Corrosion Sensor	
171	Vu Viet Hoang, Jin-An Du, and Wei-Hsiu Hu	An Experimental Study on the Bacterial Self-Healing Capacity of Cementitious Mortar Under Varied Curing Regimes	
180	Hafiz Muhammad Shoaib and Kenichiro Nakarai	Effect of Extended Water Curing after Heat Curing on Chloride Transport Resistance of Fly Ash Concrete under Cyclic Wetting–Drying Exposure	
193	Sakito Kobayashi	Effect of flow velocity on sulfuric acid deterioration of mortar	
2E			Topics : Testing and Modeling for Concrete and Structures
Time : Oct. 16 (Fri) 09:00–10:30			Venue : Michelangelo Hall
#	Authors	Title	
16	Yusuke Maida, Kakeru Sato, Zelin Wang, Alex Shegay, Koichi Kusunoki and Hiroyasu Sakata	Cyclic loading test of reinforced concrete frames with masonry infill retrofitted with steel dampers	
32	Michihiro Kunii and Hirotaka Suzuki	Experimental Study and Seismic Design of Railway RC Rigid-Frame Viaduct Columns under High Axial Compression	
45	Yukihide Kajita, Yoshiaki Sakai and Tomohiko Yamasaki	Investigation of the Load-Bearing Performance of Precast Box Culverts with Corner Joints by Reversed Cyclic Load Tests	
58	Remma Sato, Xi Ji, Yuya Takahashi, Haruki Goto, Ryo Yoshida, Kento Saito and Takuya Maeshima	Moisture and Heat Transfer Characteristics of Pavements Based on the Microstructure of Asphalt Mixtures and Their Impact on the Properties of Reinforced Concrete Slabs	
61	Hansu Choi, Seong-Hyun Park, Geuntae Hong, Jin-Young Lee, Jun-Mo Yang and Seong-Cheol Lee	Experimental Investigation on the Bond Behavior of a GFRP Bar in PP Fiber-Reinforced Concrete Containing Steel Slag	
214	Rinta Nakamura	Numerical Study on the Load-Resisting Mechanism of Steel Girder–RC Girder Connections	

2F Topics : FRC, HPFRCC, UHPC, ECC, and Advanced Concrete Materials		
Time : Oct. 16 (Fri) 09:00–10:30		Venue : Nietzsche Hall
#	Authors	Title
41	Ya Chun Chang, Ming-Gin Lee, Yung-Chih Wang and Wei-Chien Wang	Debating Sustainability and Strength: Life-Cycle Performance of Ultra-High Performance Concrete (UHPC) and a Critical Evaluation of Pressurized Carbon Capture Curing Technology
53	Changyu Kuo	Multifunctional Structural Concrete with Integrated Energy Storage: Hybrid Fiber and Carbon Nanomaterial Reinforcement
116	Chia-Hsuan Chen, Min Tsung Chen, Shang-Fei Chuo and Ming-Gin Lee	Application of Ready-Mix Ultra-High Performance Concrete in Taiwan Highway Bridge Repair
154	Shi Yin	Research and Applications of High-Performance Polyolefin Notched Fibers in Mass Concrete, Flooring, UHPC and ECC
161	Yi-Cheng Lu, Min-Hsieh Li, Chia-Ying Chung and Wei-Hsiu Hu	Low-Carbon Engineered Cementitious Composites (ECC) Using Portland Limestone Cement (PLC), Ground Granulated Blast-Furnace Slag (GGBFS), and Carbonation Curing
181	Wen Zhou, Rowin Bol, Zhaozheng Meng, Erik Schlangen and Branko Šavija	Tailored Poisson's Ratio-reinforced Cementitious Composites
2G Topics : Supplementary Cementitious Materials		
Time : Oct. 16 (Fri) 09:00–10:30		Venue : Locke Hall
#	Authors	Title
invited	Faiz Shaikh	Lithium slag as potential supplementary cementitious materials for low-carbon concrete: pozzolanic, and mechanical and durability properties
79	Kentaro Nakazato, Faizudin Hafiz Zadah and Yao Luan	Early-Age Mechanical Performance and Cracking Behavior of SHCC Incorporating High-Volume Blast-Furnace Slag
97	Takeshi Iyoda	Proposal for Grading system of Concrete Environmental Impact on Carbon dioxide Emissions and Circular Economy in Various Types of Concrete
142	Kyoka Kumano, Yuko Ogawa, Kenji Kawai, Seiya Jigawa, Shinichiro Ishimori and Yuji Tsubota	STRENGTH AND MASS TRANSFER RESISTANCE OF CONCRETE USING HIGH-BIOMASS CO-FIRED FLY ASH
188	Tanapat Kaewkrajok, Warangkana Saengsoy and Somnuk Tangtermsirikul	Effects of Substandard Fly Ash on Free Expansion and Compressive Strength of Expansive Concrete
209	Ali Babalghaith, Saeed Al-Tarbi, Mariam Al Sobaie, Rida Assaggaf and Mohammed Al-Osta	CO ₂ -Cured Masonry Units Incorporating Construction and Demolition Waste Aggregates and Sustainable Binders

Nagataki Special Session 3		
Time : Oct. 16 (Fri) 10:45–12:00		Venue : Socrates Hall
#	Authors	Title
60	Kazuto Fukudome	Proposal of a Support System for Creating Curing Plan of Concrete
120	Takahiko Watanabe, Yushi Kita and Hitoshi Takeda	VFC Replacement Strengthening of Existing RC Hollow Slab Bridges with Insufficient Void Cover
13	Saki Namimatsu, Mitsuyasu Iwanami	Spatial Evaluation of Crack Propagation in Surface-Coated Concrete Using Image Analysis and Spatial Statistical Methods
48	Takahiro Nishida, Miyu Ohtake, Takanosuke Suzuki and Lanh Si Ho	Degradation Progress of Bridge Structures Based on Markov Chain Model with Visual Inspection Data – A Case Study in Japan
Address of appreciation by Prof. Nagataki		
3A Topics : Maintenance, Repair, and Retrofit		
Time : Oct. 16 (Fri) 10:45–12:00		Venue : Archimedes Hall
#	Authors	Title
29	Fuki Ishizuka, Koji Matsumoto, Takashi Hirai, Kunikatsu Yoshida, Ryotaro Bunya and Tamon Ueda	Bond Behavior of NSM-CFSS Applied to Concrete Damaged by Freeze-Thaw Cycles
39	Henri Kamada, Ryo Yoshida, Takanori Sumi and Shohei Yoshida	The Effects of Environmental Factors and Aging on the Surface Quality of Concrete on Urban Expressways
163	Wei Zhang and Benqing Lin	Experimental and theoretical study on the flexural behavior of reinforced concrete beams strengthened with CFRP-SMA composite plate
194	Kazuhiro Kamiyama, Itsuki Ichibangase and Hiroki Tamai	Structural Performance of Deteriorated and Segment-Rehabilitated Reinforced Concrete Sewer Pipes

3B Topics : Low-Carbon Binders, Eco-cement, and Green Concrete Time : Oct. 16 (Fri) 10:45–12:00 Venue : Alexander Hall		
#	Authors	Title
74	Fu-Chi Hsu, Ssu-Yu Chen and Tzong-Ruey Yang	Study on the Early-Age Engineering Properties of PLC Cementitious Materials
93	Dohyeong Kim, Jin-Young Lee, Jun-Mo Yang, Seong-Cheol Lee and Geuntae Hong	Effect of Superabsorbent Polymer on Mineral Carbonation and Physical Properties of Steelmaking Slag Concrete
95	Seongwon Choi and Geuntae Hong	Mechanical Performance of BOF Slag Mortar Modified with Superabsorbent Polymer under Accelerated Carbonation Curing
108	Omid Hassanshahi, Nima Azimi and Diana Bajare	Chemo-Mechanical Damage Evolution and Carbon Efficiency of Biomass-Modified Cement Mortars under Compressive Loading
123	Lin Yu-Hsien	Method for sequestering carbon by utilizing wasted fresh concrete
3C Topics : AI/ML for Design, Analysis, and Predictive Decision-making Time : Oct. 16 (Fri) 10:45–12:00 Venue : Da Vinci Hall		
#	Authors	Title
117	Ozana-Adnana Petcu, Georgiana Bunea, Ana-Maria Toma, Petru Mihai, Aliz-Eva Mathe and Ionut-Ovidiu Toma	Ensemble Machine Learning for Predicting the Seismic Behavior of Medium-Rise Reinforced Concrete Frame Structures
215	Euncheol Choi	Deterministic IFC-to-Revit Native Reconstruction Across Heterogeneous BIM Authoring Tools
217	Lee Hwa Eun	Development of a Mixed Reality-Based Visualization and Measurement System for Automated Rebar Placement Inspection
220	Min-Seo Kim, Yoon-Soo Shin and Changsoo Kim	Numerical Database and Parameter Analysis of RCS Joints
221	Yoon-Soo Shin, Min-Seo Kim and Changsoo Kim	Feature Importance Analysis of Multi-Channel Ground Motion Representation for Deep Learning-Based Nonlinear Seismic Response Prediction

3D		Topics : Concrete Durability	
Time : Oct. 16 (Fri) 10:45–12:00		Venue : Raphael Hall	
#	Authors	Title	
19	Nigene Ndeze, Shinichi Miyazato and Yuuki Hosaka	VISUAL ASSESSMENT OF MORTAR SURFACE CONDITION AS AN INDICATOR OF PHYSICAL, MECHANICAL, AND DURABILITY PERFORMANCE	
80	Younga Jang, Wonchang Kim, Jieun Choi, Heesup Choi and Taegyu Lee	Dominance Analysis of Governing Factors for Residual Compressive Strength of Thermally Stressed Concrete	
107	Nima Azimi, Omid Hassaanshahi and Diana Bajare	Chemo-Mechanical Degradation of an NHL–Pozzolan Mortar under Prolonged Sulfuric-Acid Exposure: Implications for Sustainable and Circular Binders	
195	Fumiya Egusa	Influence of particle size of roof tile waste aggregate on the internal curing effect on mass transfer resistance of steam-cured fly ash concrete	
218	Taemee Thabtheang, Warangkana Saengsoy and Somnuk Tangtermsirikul	Effects of a Crystalline Material on Iron Sulfide Oxidation Suppression	
3E		Topics : Health Monitoring and Non-Destructive Testing	
Time : Oct. 16 (Fri) 10:45–12:00		Venue : Michelangelo Hall	
#	Authors	Title	
23	Masatoshi Aizawa ,Mitsuhiro Takeda	Laboratory and Field Assessment of Concrete Surface Densification Using a Simplified Permeability Testing Device	
56	Chia-Chi Cheng, Kai-Chieh Chang and Dong-Long Jiang	Comparative Analysis of Rayleigh Wave Velocity Profiling and HTLM-based Layered Inversion for Assessing the Deteriorated Range of Heat-Damaged Concrete	
91	Hoi-Fung Yip and Tomoko Fukuyama	Compressive Strength and Voltage Response of PVDF/Cement Mortar Composites under Cyclic Loading	
138	Yujiro Sumiyoshi, Kiyoshi Nonaka, Ryo Kishira and Akane Ikada	Application of Combining RFID and Sensing Technology - Determining the Optimal Time for Early-entry Sawing for Concrete Pavement Based on Temperature	

3F Topics : FRC, HPFRCC, UHPC, ECC, and Advanced Concrete Materials Time : Oct. 16 (Fri) 10:45–12:00 Venue : Nietzsche Hall		
#	Authors	Title
72	Ai-Yun Lin, Chia-Ying Chung, Yi-Cheng Lu, Jin-An Du and Wei-Hsiu Hu	Long-Term Expansion–Shrinkage Behavior of Ultra-High-Performance Concrete (UHPC) under Different Curing Regimes
102	Chun-Cheng Chang, Wen-Cheng Liao and Shih-Yang Lai	Experimental Validation Study on the Localization of UHPC in Taiwan in Compliance with AASHTO UHPC Specifications
122	Vyacheslav Falikman	Very High Strength Fast-Hardening Concrete Using Composite Binders
148	Tesfahun Mekonnen and Chun-Tao Chen	Production of Functionally Graded Cement Mortar via Electrokinetic Treatment
185	Naoshi Ueda	Finite Element Analysis of Fiber-Reinforced Cementitious Composites Considering Fiber Orientation Using an Orthotropic Model
3G Topics : Supplementary Cementitious Materials Time : Oct. 16 (Fri) 10:45–12:00 Venue : Locke Hall		
#	Authors	Title
9	Ze Liu, Yu Gao, Shuaiyun Wen and Chanchan Lu	Workability and Properties of cement solidified Municipal solid waste incineration (MSWI) fly ash as mineral admixture
44	Hsin Ying Wu, Ying Kuan Tsai, Wei Hao Lee and Si Chen Chen	Experimental Investigation of the Mechanical and Functional Properties of Geopolymers Based on Lunar Regolith Simulant
66	Si Gon Kim, Ji Eun Choi, Tae Hyung Kim, Young Jin Nam and Tae Gyu Lee	Mechanical Property Evaluation of Mortar Incorporating Carbon-Neutral Multi-Component Construction Materials Using Non-Destructive Testing
68	Mizuki Takahashi and Shingo Asamoto	The Combined Effects of Blast Furnace Slag and Fly Ash on Mortar Properties under Different Early-Age Curing Temperature Histories
96	Chiaki Kawatani and Takeshi Iyoda	Effects of Water-to-Binder Ratio and Ordinary Portland Cement Content on the Hydration Behavior of High-Volume Blast-Furnace Slag Cement

4A Topics : Maintenance, Repair, and Retrofit Time : Oct. 16 (Fri) 13:30–15:00 Venue : Archimedes Hall		
#	Authors	Title
6	Yuki Iino and Kohei Nagai	Development of Meso-scale Digital Twin Model for Damaged RC Based on Surface Information
52	Atsunori Kouro, Xi Ji and Yuya Takahashi	Meteorological/Oceanographic Databases Utilizations for Assessing Airborne-Chloride-Induced Deterioration Risk in Concrete Bridge Networks
204	Ikuyo Koike and Hirotaka Suzuki	Restoration of Railway Viaducts Damaged by the 2025 Offshore Aomori Earthquake
210	Riko Iinuma, Makoto Iwasaki, Nicharin Nithimethaporn, Katsufumi Hashimoto and Natsuki Yoshida	Self-Powered Monitoring System for Detecting Deterioration of Concrete due to Sulfuric Acid Attack Using Electret MEMS Vibrational Energy Harvester
223	Chien-Kuo Chiu and Teshome Chala Addune	Investigation on Rehabilitation of RC Frames with Corroded Infill RC Squat Walls after Cyclic Loading using CFRP Sheets/Strips
225	Chien-Kuo Chiu and Yonas Teferi Yilma	Experimental investigation on rehabilitation effectiveness of locally corroded RC slabs using external CFRP strip plates
4B Topics : Low-Carbon Binders, Eco-cement, and Green Concrete Time : Oct. 16 (Fri) 13:30–15:00 Venue : Alexander Hall		
#	Authors	Title
24	Hajun Im, Jieun Choi, Youngjin Nam, Hyeonngil Choi and Taegyu Lee	Mechanical Performance of Lithium Slag Mortar under Ambient and Elevated Temperature Curing
27	Wei-Chien Wang, Chia-En Tsai, Kai-Jie Hu and Ming-Gin Lee	Effect of Limestone Powder on the Hydration Heat Evolution and Adiabatic Temperature Rise of Portland Cement Systems
55	Gunja Shah and Alireza Kashani	Alkaline Activation of Delithiated β -Spodumene in Hybrid Cementitious Systems
94	Thoudam Kritish Singh and Geuntae Hong	Reaction Behaviour and Strength Development of Alkali-Activated Steelmaking Slags
172	Shipeng Zhang	Using CO ₂ as a rheology modifier and its application in 3D concrete printing
197	You-Lin Huang, Chao-Feng Wu , and Yin-Wen Chan	Study on the Effects of GGBS and Fly Ash Application on Carbon Sequestration in Concrete

4C Topics : AI/ML for Design, Analysis, and Predictive Decision-making Time : Oct. 16 (Fri) 13:30–15:00 Venue : Da Vinci Hall		
#	Authors	Title
38	Yosuke Doi, Kanako Toda, Takumi Saito, Tsutomu Sato, Yuzo Akashi and Daisaku Suda	Machine Learning-Based Prediction of Strength Development in Dredged Soil-Steel Slag Mixtures and Analysis of Feature Influence on Strength
82	Jieun Choi, Hajun Im, Si Gon Kim, Hyeonggil Choi and Tae Gyu Lee	Prediction of Residual Compressive Strength Ratio of High-Temperature Exposed Concrete Using Machine Learning Techniques
147	Kotoha Makino, Yue Bao, Atutoshi Kurihara and Sachie Sato	AI-Assisted Infrared Thermographic Inspection for Exterior Wall Deterioration Assessment of Reinforced Concrete Buildings Using Environment-Aware Pseudo-Thermal Image Generation
132	Wang Yueqi, Ichikawa Shotaro and Tamataki Koji	Development of an AI-Based Aggregate Grading Estimation Application for Ready-Mixed Concrete Plants
166	Jeonghyun Kim and Diana Bajare	Data Availability and Reproducibility in Concrete Properties Prediction Machine Learning Research
213	Serrin Kim	Verification-aware LLM orchestration of deterministic design engines for code-compliant reinforced concrete building design
4D Topics : Concrete Durability Time : Oct. 16 (Fri) 13:30–15:00 Venue : Raphael Hall		
#	Authors	Title
21	Honoka Osawa, Ren Dawei, Kodai Ueda and Kohei Nagai	Numerical Simulation of Moisture Transport in Reinforced Concrete with Splitting Cracks Using 3D RBMSM
25	Yuanxiang Dong and Naoshi Ueda	Experimental Investigation of Expansion and Elastic Modulus of ASR-Affected Concrete Under Prestress
34	Yusei Oyama, Kota Inaba, Tran Minh, Ouyang Zenan and Takeshi Maki	Flexural Behavior of Prestressed Concrete Beams with Corroded PC Strand
43	Dawei Ren, Minghong Qiu and Kohei Nagai	Investigation on Mechanical Failure and Permeability Evolution of UHPC Based on 3D RBMSM-Conduit Coupled Model
141	Guan-Lin Ye, Chang-Wei Lin and Yu-Hsien Lin	Durability Performance of Concrete Incorporating Portland Limestone Cement, Ground Granulated Blast-Furnace Slag, and Fly Ash
162	Hongbok Choe, Manabu Kanematsu, Shunya Sakon, Jun-taek Jeong, Naoko Tsuchiya, Kiyofumi Nakada, Tomohisa Mukai and Hideyuki Kinugasa	Evaluation of the Durability of Hot-dip Galvanized Bars in Concrete under High Temperature Environment

4E Topics : Health Monitoring and Non-Destructive Testing Time : Oct. 16 (Fri) 13:30–15:00 Venue : Michelangelo Hall		
#	Authors	Title
64	Yuto Tanaka, Yuma Kawasaki and Tomoko Fukuyama	Differentiation of Fracture-Induced and Triboelectric Electrification in Cement Paste Using Voltage and Acoustic Emission Measurements
70	Kosuke Yokota, Tomoko Fukuyama and Takashi Ikuno	Time-Dependent Evaluation of Corrosion-Induced Cracking in Cement-Based Materials Using Electrical Impedance Tomography
75	Kenji Seta and Tomoko Fukuyama	Characterization and Mix Design Optimization of Carbon Nanotube-Modified Cementitious Materials for Self-Diagnostic Repair Applications
76	Seunghyun Youn, Yuma Kawasaki, Tomoko Fukuyama, Hiroharu Kamada and Rintaro Yawaka	Acoustic Emission Evaluation of Damage Progression in 3D-Printed Layered Cement-Based Specimens under Compressive Creep
90	Rintaro Yawaka, Tomoko Fukuyama, Yuma Kawasaki, Hiroharu Kamada and Seunghyun Youn	Evaluation of Damage Progression and Creep Behavior in 3D-Printed Cementitious Specimens Based on Stepwise Compressive Loading
186	Daiki Tanaka, Yosuke Ito and Shinji Kawabe	Effect of Impact Position on Impact-Sound Characteristics in Hammering Inspection of Exterior Tile Walls
4F Topics : FRC, HPFRCC, UHPC, ECC, and Advanced Concrete Materials Time : Oct. 16 (Fri) 13:30–15:00 Venue : Nietzsche Hall		
#	Authors	Title
36	Chenwen Lee, Chunhua Fang, Yenchang Su, Mingku Chen, Yuchen Ou, Yenru Wu, Yanming Fong, Caiyi Luo and Chengjiang Guo	Application of Ultra-High Performance Concrete (UHPC) in Bridge Engineering - A Case Study of Kaohsiung Section Construction Works of National Freeway No.7
98	Wen-Cheng Liao, Wen-Cheng Hsu and Yu-Wei Liao	Numerical Analysis and Experimental Study on Simplifying the Connection Between BRB and RC Frames Using Steel Fiber Reinforced Concrete
125	Naomasa Fujimoto and Tomoko Fukuyama	Evaluation of the Heat Transfer Characteristics of Carbon Nanotube-Mixed Cementitious Materials for Potential Applications of the Seebeck Effect
145	P.L. Ng, J.J. Chen and A.K.H. Kwan	Improving post-fire performance of concrete by incorporating nano-silica sol
187	Yong Chen Li, Jhen Wei Wu, Tsung Yeh Hsieh, Chun Chung Chen and Yu Chen Ou	Experimental Behavior of a 25.8-Meter Precast Segmental Prestressed UHPC Girder
208	Rida Assaggaf, Ali Babalghaith, Saleh Bin Alshekh Ali and Amin Al-Fakih	Effect of Dry Mixing Time and Fiber Integration Sequence on the Flowability and Mechanical Properties of UHPC

4G Topics : Recycled Materials & Supplementary Cementitious Materials Time : Oct. 16 (Fri) 13:30–15:00 Venue : Locke Hall		
#	Authors	Title
35	Taehyung Kim, Youngjin Nam, Sigon Kim, Heesup Choi and Taegyu Lee	Mechanical Properties of Concrete with Modified Bio-Sulfur as a Cement Replacement
37	Youngjin Nam, Taehyung Kim, Hajun Im, Heesup Choi and Taegyu Lee	Mechanical Performance and Microstructural Implications of Plastic Pyrolysis Char as a Cement Replacement in Mortar
88	Wepola Wijesinghe, Yao Luan, Sabiha Tarannum and Chunhe Li	Utilization of IGCC Slag as Fine Aggregate in Strain-Hardening Cementitious Composites
101	Chia-Cheng Lin, Wen-Hui Chen, Po-Jui Li and Ssu-Yu Chen	Volume Stability and Durability of Recycled Aggregate Concrete
144	Akihiro Kubo, Dao Xuan Hoang, Yuko Ogawa and Kenji Kawai	STRENGTH AND HYDRATION PROPERTIES OF HIGH-STRENGTH STEAM-CURED FLY ASH CONCRETE USING INTERNAL ALKALI ACTIVATION BY RECYCLED CONCRETE AGGREGATE
174	Kim Hung Mo and Fengyi Zhang	Valorizing concrete slurry waste as artificial aggregate via carbonation
5A Topics : Maintenance, Repair, and Retrofit & Remote Techniques for Construction and related technology Time : Oct. 16 (Fri) 15:15–16:45 Venue : Archimedes Hall		
#	Authors	Title
10	Shohei Minakawa ,Yasuhiro Koda	Combined Resin-Based Repair and Carbon Fiber Sheet Strengthening for RC Bridge Decks with Disintegration of Concrete: An Experimental Study
30	Yota Arakawa, Naoko Yoshida and Ryo Yoshida	Isolation and Characterization of Thermotolerant, Alkaliphilic Bacillus and Oceanobacillus Strains for Microbial Self-healing Concrete
151	Kohei Mizuno and Kazuya Uragami	Evaluation of the workability of self-compacting concrete using image analysis
192	Tsungyao Huang and Naoshi Ueda	3D-RBSM Analysis of Reinforcing Bar End Configurations in Reinforced Concrete Beams
222	Chiu Chien-Kuo and Tewodros Hebtamu Tsegaw	Experimental Study on the Structural Performance of CFRP-Strengthened Exterior RC Beam–Column Joints with Insufficient Transverse Beam Confinement

5B Topics : Low-Carbon Binders, Eco-cement, and Green Concrete Time : Oct. 16 (Fri) 15:15–16:45 Venue : Alexander Hall		
#	Authors	Title
49	Anastasia Jesica	Performance of Low-Carbon Concrete: Strength Development Evaluation of Optimized Multi-Waste Concrete Composites
54	Yenfu Lin	Instructions for the Use of GGBFS in Precast Geopolymer Concrete
67	Yu-Sheng Chen, Chun-Fu Chang and Tzong-Ruey Yang	Research on Mineralized Carbon Sequestration Technology for Recycled Water of Ready-Mixed Concrete Plants
73	Chih-Jen Wu, Chi-Wen Ma, Tzong-Ruey Yang and Fu Chi Hsu	Study on the Engineering Properties of Concrete Incorporating Limestone Powder as a Supplementary Cementitious Material
152	Hsien-Keng Chan	Molecular Design of Polycarboxylate (PCE) Superplasticizers for NaOH-Activated Slag: From Plasticizing Performance to Early Hydration Behavior
183	Jhen-Wei Wu	Research on the Application of High Cement Replacement Low-Carbon Concrete in Bridge Column
5C Topics : Seismic Resistant Concrete Structures Time : Oct. 16 (Fri) 15:15–16:45 Venue : Da Vinci Hall		
#	Authors	Title
31	Terry Y.P. Yuen, Tzu-Han Wen, Marnie B. Giduquio and Min-Yuan Cheng	High-fidelity Simulations of Force Transfer Mechanisms in Reinforced Concrete Walls with Construction Joints
50	Fuka Suzuki	Seismic Behavior of Concrete Columns Reinforced with CFRP Bars and Spirals
114	Jin Ho Park, In Ae Kim and Young Hak Lee	Experimental Evaluation of the Cyclic Lateral Performance of Precast Concrete Shear Walls Using Bolted Pocket Connections
115	Dong Hyeong Lee, Jong Hyun Jung and Min Sook Kim	Experimental Study on Structural Behavior of Shear Wall Joints with Bolted-type Joint Boxes
121	Yujin Yamamoto	Evaluation of Anchorage Performance of a Mechanical Anchorage Using Pull-Out Tests and Meso-Scale Analysis
	Wisena Perceka, Masykur Kimsa	Probable Moment Strength of Axially Loaded RC Columns for Capacity-Based Shear Design

5D			Topics : Concrete Durability
Time : Oct. 16 (Fri) 15:15–16:45			Venue : Raphael Hall
#	Authors	Title	
11	Masaki Koizumi, Satoshi Takaya and Takashi Yamamoto	Basic Investigation into Carbonation Mechanism of One-Part Alkali-Activated Materials	
15	Haru Nakamichi and Koji Matsumoto	Analytical Study on Shear Capacity of RC Linear Members Subjected to Width-direction Eccentric Axial Tension	
17	Chung-Hao Wu, Guang Ye, Chung-Ho Huang and Yung-Chiang Lin	Use Ultrasonic Pulse Velocity for Evaluating the Density of CO ₂ -Curing Lightweight Mortar	
40	Lilan Zhang and Tetsuya Ishida	Nanoscale Mechanisms of Chloride Transport in C–(A)–S–H Nanopores: Effects of SCM-Induced Composition Changes	
99	Sota Toyoda, Kohei Sakihara and Takumi Kasahara	Measurement of Rain Exposure Conditions and Airborne Chloride Transport Analysis Using Digital Twin Modeling for Reinforced Concrete Structures	
139	Hiroto Kikuchi and Tomoko Fukuyama	Fracture Behavior of 3D-Printed Mortar: Effects of Residual Interlayer Voids Visualized via X-ray Computed Tomography	
5E			Topics : Recycled Materials
Time : Oct. 16 (Fri) 15:15–16:45			Venue : Michelangelo Hall
#	Authors	Title	
42	Shohei Arai, Katsufumi Hashimoto, Takafumi Sugiyama and Teppei Endo	Quality Assessment of Carbonated Recycled Aggregate for Permeability at Interfacial Transition Zone by Using Laser-Induced Vibration Test	
51	Yanlin Huang	Development of Passive Heat Dissipation Coating and Asphalt Concrete Pavement Using Basic Oxygen Furnace Slag	
59	Seong-Hyun Park, Hansu Choi, Geuntae Hong and Seong-Cheol Lee	Mechanical Behavior of Concrete Incorporating NaOH Pre-treated Hydrophobic Recycled Fibers	
63	Kailin Hsu	Improving the Workability of Manufactured Sand Concrete Using EVA Redispersible Powder	
112	Lige Gu, Yue Liu and Yan Zhuge	Effects of Targeted Biochar Deposition on Mechanical Properties and Microstructure of Recycled Aggregate Mortar	
191	Lechin Ngov, Warangkana Saengsoy, Krittiya Kaewmanee and Somnuk Tangtermsirikul	Preliminary Study on the Use of Recycled Sludge Water	

5F Topics : Other Topics & Codes and Standards		
Time : Oct. 16 (Fri) 15:15–16:45		Venue : Nietzsche Hall
#	Authors	Title
104	Yu-Wen Liu, Su-Wen Kao and Chuan Yi Chu	Research on the Effect of Organic Fiber addition on the Properties of 3D Printed Concrete
105	Chiao-Jung Yu, Yung-Tse Cheng and Wen-Cheng Liao	Fabrication and Electrochemical Performance of Cement-Based Composite Energy Storage Materials
164	Karnan Manickavasakam, Mohammed A. Al-Osta and Md. Abdul Aziz	Beyond Load Bearing: Energy-Integrated Conductive Concrete for Smart Infrastructure
178	Kazuki Kimura, Yuzuto Nomura, Ryo Ikezawa, Hiroshi Nemoto and Shigeyuki Date	Effects of Cellulose Nanofibers on Shotcrete
203	Chin-Huai Young and Ding-Yan Tsai	New Technology on Innovative Precast Concrete Solar Wall
212	Myeongguk Son and Baek Jangwoon	Toward a Transparent, Code-Traced Open-Source Alternative to Commercial Structural Analysis for BIM-Based Building Modeling
5G Topics : Other Topics		
Time : Oct. 16 (Fri) 15:15–16:45		Venue : Locke Hall
#	Authors	Title
12	Masato Ando and Koji Matsumoto	Investigation of the Corrosion Process and Cracking Behavior of Large-Diameter Reinforcing Bars in Concrete
14	Koji Morita, Hiroshi Takenaka and Yoshitaka Kato	Effect of Concrete Flowability on the Number of End-Hose Relocations during Slit Caisson Construction and Prediction of the Required Number of Relocations
177	Kengo Togashi, Miina Hara and Shigeyuki Date	Effects of Foam Curing on the Properties of Steam-Cured Mortar
196	Yu-Chen Su	Feasibility Study of Simulating Crack Propagation in Reinforced Concrete Beam Using the Material Point Method
198	Chung Chih Hung, Feng Ju Hung, Yi Hsuan Ko and Chen-Hong Zhang	Policy Regulation and Competitiveness Challenges of the Cement Industry under the Net-Zero Transition: A Case Study of EU CBAM Implementation and GCCA Global Initiatives
200	Dean Forgeron	CO ₂ Treatment of Reclaimed Water: Stabilizing and Enhancing the Cementitious Reactivity of Suspended Solids

Topics : TCI-JCI Special Session 1		
Time : Oct. 16 (Fri) 13:40–14:30		Venue : Socrates Hall
#	Authors	Title
JCI 1	Masashi Koga — Master's student, Tokyo University of Science	Relationship Between Residual Seismic Capacity Ratio and Natural Period Change in Mid- to High-Rise RC Buildings Damaged During the 2024 Hualien Earthquake
TCI 1 (77)	Melati Sari Dewi — Doctoral student, National Central University	Influence of Fiber Inclusion on UHPM Strength under Aggressive Immersion Environments
JCI 2	Kosuke Murayama — Master's student, Akita Prefectural University	What Happens Before Failure: DIC Visualization of Cracking Behavior in RC Shear Walls with Openings
TCI 2 (100)	Ting-En Lu — Master's student, National Taiwan University	Study on the Creep Behavior and Predictive Models of Ultra-High-Performance Concrete
Topics : TCI-JCI Special Session 2		
Time : Oct. 16 (Fri) 14:50–15:40		Venue : Socrates Hall
#	Authors	Title
TCI 3 (150)	Susan Cherotich Kerio — Doctoral student, National Taiwan University of Science and Technology	Influence of Air-Entraining Agent Characteristics on Carbon Dioxide Storage Efficiency and Microstructural Evolution in Fresh Cement Paste
JCI 3 (85)	Kento Fukuchi — Master's student, Hokkaido University	Optimization of Deep Learning Applications for Selecting Paths in 3D Concrete Printing
TCI 4 (176)	Cheng-Kai Wei — Master's student, National Taiwan University	Application of 3D Convolutional Neural Networks (3D-CNN) for Concrete Slump Prediction in Ready-Mixed Concrete Plants
JCI 4	Tomoki Suenaga — Undergraduate student, Kagawa University	Reactivity Evaluation Framework for Emerging Supplementary Cementitious Materials from Regional Underutilized Resources
Topics : TCI-JCI Special Session 3		
Time : Oct. 16 (Fri) 16:00–16:50		Venue : Socrates Hall
#	Authors	Title
JCI 5	Rui Shintani — Undergraduate student, Kagawa University	Elemental Zonation and Microstructure of Calcium Aluminate Cement Paste Exposed to Deep Sea Conditions: A SEM-EDS Study
TCI 5 (182)	Ying Zheng — Doctoral student, National Taiwan University	Biochar-Modified Cement Mortar for Carbon Sequestration and Emission Reduction under Pressurized Carbonated Water Curing
JCI 6	Yuki Kambe — Master's student, Gifu University	Effects of Concrete Cover Thickness and Flexural Crack Width on Reinforcement Corrosion in RC Members
TCI 6 (224)	Fikri Ghifari — Doctoral student, National Taiwan University of Science and Technology	Experimental Study on the Effect of Recycled Polyethylene Terephthalate Fiber on Compressive and Flexural Strength of Low Carbon Concrete