

8th December 2020 (Tuesday)

| Time (HKT) | Parallel Session 1 | Parallel Session 2 | Parallel Session 3 |
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| | Quality Control and Management (A1) (4) | Schedule and Cost Management (A2) (3) | BIM-enabled AEC Applications I (A3) (4) |
| Session Chairs | Dr. Minkoo KIM National Chungbuk University | Dr. Jun WANG Deakin University | Dr. JoonOh SEO Hong Kong Polytechnic University |
| 09:00 – 09:10 | [ICCEPM-78] Registration-free 3D Point Cloud Data Acquisition Technique for as-is BIM Generation Using Rotating Flat Mirrors <i>Fangxin Li, Min-Koo Kim and Heng Li</i> | [IPC-27] Evaluating the Economic and Social Benefits of Multi-utility Tunnel Through an Agent-based Simulation Approach <i>Chengke Wu, Jun Wang, Wenchi Shou and Xiangyu Wang</i> | [IPC-5] Extension of IFC Model Schema for Automated Prefabrication of Steel Reinforcement in Concrete Structures <i>Yuhan Liu, Muhammad Afzal, Jack C.P. Cheng and Vincent J.L. Gan</i> |
| 09:10 – 09:20 | [ICCEPM-83] A Framework for Automated Formwork Quality Inspection using Laser Scanning and Augmented Reality <i>Hung-lin Chi, Min-Koo Kim and Julian Thedja</i> | [ICCEPM-183] Challenges and Suggestions of Resource Planning for Standardized Concurrent Construction <i>Xingbin Chen, Jung In Kim, Yuan Fang, Ke Dai and Sining Li</i> | [ICCEPM-17] BIM-based Lift Planning Workflow for On-site Assembly in Modular Construction Projects <i>Songbo Hu, Yihai Fang and Robert Moehler</i> |
| 09:20 – 09:30 | [ICCEPM-166] A Study on Multilayer Sub-contracting in Construction Industry of Hong Kong <i>T. Cheng, H. Lam, K. Leung, W. Liu, T. Zayed and Y. Sun</i> | [ICCEPM-211] Causes of Delay in Tall Building Projects in GCC Countries <i>Muizz Sanni-Anibire, Rosli Zin and Sunday Olatunji</i> | [IPC-23] Cost Analysis of Geometric Quality Assessment of Structural Columns Based on 3D Terrestrial Laser Scanning <i>Jingjing Guo, Liang Yuan and Qian Wang</i> |
| 09:30 – 09:40 | [ICCEPM-200] Analysis and Survey of Design Decision Making Process in Steel Production Process <i>Satoru Furukawa, Tomohiro Yoshida, Chi Naiyuan, Hiroyuki Okamoto and Shuzo Furusaka</i> | Q&A for all papers in this session | [ICCEPM-26] 3D Printing in Modular Construction: Opportunities and Challenges <i>Ming kai Li, Dezhi Li, Jiansong Zhang, Jack C. P. Cheng and Vincent J. L. Gan</i> |
| 09:40 – 10:00 | Q&A for all papers in this session | | Q&A for all papers in this session |
| | Risk and Safety Management in Construction I (B1) (4) | Visualization in AEC Industry (B2) (4) | BIM-enabled AEC Applications II (B3) (4) |
| | Dr. Moumita DAS Hong Kong University of Science and Technology | Dr. Seungjun AHN University of South Australia | Dr. Seung Hyun CHA Hanyang University |
| 10:00 – 10:10 | [IPC-15] Ontology-Based Risk Assessment and Solution during Shield Tunnel Construction <i>Yu-Cheng Zhou and Jia-Rui Lin</i> | [ICCEPM-40] The Effectiveness of HMD-based Virtual Environments through 3D Camera for Hotel Room Tour <i>Ki Han Kim, Junsoo Lee, Choongwan Koo and Seung Hyun Cha</i> | [IPC-28] A Framework for Semantic Interoperability of BIM and UAS Flight Mission Planning System <i>Sungjin Kim and Soowon Chang</i> |
| 10:10 – 10:20 | [ICCEPM-68] Correlation Extraction from KOSHA to Enable the Development of Computer Vision based Risks Recognition System <i>Numan Khan, Kim Youjin, Doyeop Lee, Si Van-Tien Tran and Chansik Park</i> | [ICCEPM-80] A VR-Trainer for Forklift Operation Safety Skills <i>Seungjun Ahn, Mitchell J. Wyllie, Gun Lee and Mark Billinghamurst</i> | [ICCEPM-88] Smart-tracking Systems Development with QR-Code and 4D-BIM for Progress Monitoring of a Steel-plant Blast-furnace Revamping Project in Korea <i>In-Hye Jung, Ho-Young Roh and Eul-Bum Lee</i> |
| 10:20 – 10:30 | [ICCEPM-73] Ontology-based Safety Risk Interactions Analysing to Support Pre-task Planning <i>Si Van-Tien Tran, Doyeop Lee, Trang Kieu Pham, Numan Khan and Chansik Park</i> | [ICCEPM-190] An Augmented Reality System for the Construction Industry and Its Impact on Workers' Situational Awareness <i>Ali Abbas, JoonOh Seo and MinKoo Kim</i> | [ICCEPM-157] Concrete Reinforcement Modelling with IFC for Automated Rebar Fabrication <i>Yuhan LIU, Muhammad AFZAL, Jack C.P. CHENG and Vincent J.L. GAN</i> |
| 10:30 – 10:40 | [ICCEPM-205] Risk Identification and Management Strategies for BIM Projects <i>Ron C.W. Ng, Jack C.P. Cheng and Moumita Das</i> | [ICCEPM-212] Impact of the Presence of Different Levels of Interactive Devices on Behavioral Performance in IVR-based Construction Safety Training <i>Yanfang Luo, Joonoh Seo, Ali Abbas and Seungjun Ahn</i> | [IPC-46] BIM Logic Mechanism and Its Function <i>Shixian Ren and Lapchu Yu</i> |
| 10:40 – 11:00 | Q&A for all papers in this session | Q&A for all papers in this session | Q&A for all papers in this session |

| | Risk and Safety Management in Construction II (C1) (3) | Practice in Construction Management (C2) (4) | BIM-enabled AEC Applications III (C3) (4) |
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| | Dr. Houtan JEBELLI Pennsylvania State University | Dr. Hongjo KIM University of Dayton | Prof. Tarek ZAYED Hong Kong Polytechnic University |
| 11:00 – 11:10 | [ICCEPM-16] Relationship between Stress Level and Reworks for Construction Professionals <i>Jeonghyeun Chae and Youngcheol Kang</i> | [ICCEPM-21] Advanced Work Packaging (AWP) in Practice: Variables for Theory and Implementation <i>Yungsoo Jung, Yeheun Jeong, Yunsub Lee, Seunghee Kang, Younghwan Shin and Youngtae Kim</i> | [IPC-40] BIM Implementation: Articulating the Hurdles in Developing Countries <i>Samuel Adekunle, Clinton Aigbavboa and Obuks Ejohwomu</i> |
| 11:10 – 11:20 | [ICCEPM-199] Construction Equipment Accidents by Time <i>Hyunho Jung, Youngcheol Kang and Sanghyeok Kang</i> | [ICCEPM-25] Claim Management Process of General Contractors in South Korea <i>Wonkyoung Seo and Youngcheol Kang</i> | [IPC-42] Visualize GIS, BIM and IoT Data for Comprehensive Green Building Parameters Monitoring <i>Mengtian Yin, Zhuoqian Wu, Ya Wen and Llewellyn Tang</i> |
| 11:20 – 11:30 | [ICCEPM-210] Construction Safety Training and their Evaluations Approaches: A Systematic Literature Review <i>Amit Ojha, Jonathan Seagers, Shayan Shayesteh, Mahmoud Habibnezhad and Houtan Jebelli</i> | [ICCEPM-143] Evaluating Construction Market of ASEAN Nations <i>Hwarang Kim, Jangsik Lim, Jongho Ock and Hyouonseung Jang</i> | [ICCEPM-164] A Framework to Automate Reliability-based Structural Optimization based on Visual Programming and OpenSees <i>Jia-Rui Lin, Jian Xiao and Yi Zhang</i> |
| 11:30 – 11:40 | Q&A for all papers in this session | Q&A for all papers in this session | [IPC-58] Effectiveness of BIM Enabled Modular Integrated Construction in Hong Kong: Applications and Barriers <i>Lee Ka Wing, Salman Tariq and Tarek Zayed</i> |
| 11:40 – 12:00 | | | Q&A for all papers in this session |
| 12:00 – 13:00 | Lunch Break | | |
| | Risk and Safety Management in Construction III (D1) (4) | Sustainability Construction and Management I (D2) (3) | BIM-enabled AEC Applications IV (D3) (4) |
| | Dr Sungjoo HWANG Ewha Womans University | Dr. Minhyun LEE Hong Kong Polytechnic University | Dr. Henrik LINDEROTH Jönköping University |
| 13:00 – 13:10 | [ICCEPM-43] Measurement of Individuals' Emotional Stress Responses to Construction Noise through Analysis of Human Brain Waves <i>Sungjoo Hwang, Houtan Jebelli, Sungchan Lee, Sehwan Chung and SangHyun Lee</i> | [IPC-57] Automatic Measurements of Carbon Emissions from Building Materials and Construction for Sustainable Structural Design of Tall Commercial Buildings <i>Vincent J.L. Gan, Xuejiao Li, Irene M.C. Lo, K.T. Tse, Jack C.P. Cheng, C.M. Chan, Patrick Ho, Amie Lai, Jenny Law, Raymond Kwok and Raymond Yau</i> | [IPC-13] The Perceived Impact of Building Information Modeling on Construction Performance <i>Chi Tian, Xingzhou Guo and Yunfeng Chen</i> |
| 13:10 – 13:20 | [ICCEPM-188] Proliferation of Health and Safety Documentation in Construction? <i>John Smallwood and Deon Bester</i> | [ICCEPM-168] Assessment of Public Engagement Approach in Various Project Stages: The Case Study of Central Market, Hong Kong <i>Crystal Wong, Icy Chan, Lily Lam, Tarek Zayed and Yi Sun</i> | [IPC-16] Dimensional Quality Assessment of Prefabricated Housing Units Using 3D Laser Scanning and BIM <i>Dongdong Tang, Yi Tan, Geng Li, Kairui Zheng and Qian Wang</i> |
| 13:20 – 13:30 | [ICCEPM-189] Industry 4.0 & Construction H&S: Comparative Perceptions <i>James Beale and John Smallwood</i> | [ICCEPM-171] Benefits and Challenges of Modular Integrated Construction in Hong Kong: A Literature Review <i>Sherif M. Abdelmaged, Sherif Abdelkhalek and Tarek Zayed</i> | [IPC-54] VDC Scorecard: Evidence-Based Understanding of VDC from 108 Projects <i>Calvin Kam, Min Ho Song and Devini Senaratna</i> |
| 13:30 – 13:40 | [ICCEPM-195] Reliability and Responsiveness of Equivital Lifemonitor and Photoplethysmography based Wristwatch for the Assessment of Physiological Parameters during a Simulated Fatigue Task <i>Shahnawaz Anwer, Heng Li, Waleed Umer, Maxwell Fordjour Antwi-Afari and Arnold YL Wong</i> | Q&A for all papers in this session | [ICCEPM-173] Determinants for Students Perceived Potential of BIM Use <i>Henrik C.J. Linderoth, Vachara Peansupap and Johnny Wong</i> |
| 13:40 – 14:00 | Q&A for all papers in this session | | Q&A for all papers in this session |

| | Risk and Safety Management in Construction IV (E1) (3) | Sustainability Construction and Management II (E2) (3) | Big Data and AI Learning I (E3) (4) |
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| | Dr. Hung-Lin CHI Hong Kong Polytechnic University | Dr. Kwangbok JEONG Sejong University | Dr. Qian WANG National University of Singapore |
| 14:00 – 14:10 | [ICCEPM-19] Reliability Evaluation of Resilient Safety Culture Using Fault Tree Analysis <i>Arun Garg, Fahim Tonmoy and Sherif Mohamed</i> | [ICCEPM-167] The Opportunities and Challenges of Implementing BEAM Plus in Hong Kong from the Perspectives of Government and Developers <i>Ka-ho Lau, Man-man Fu, Yik-fung Yim, Tarek Zayed and Yi Sun</i> | [ICCEPM-7] Combining Machine Learning Techniques with Terrestrial Laser Scanning for Automatic Building Material Recognition <i>Liang Yuan, Jingjing Guo and Qian Wang</i> |
| 14:10 – 14:20 | [ICCEPM-41] Joint Reasoning of Real-time Visual Risk Zone Identification and Numeric Checking for Construction Safety Management <i>Ahmed K Ali, Lee Do Yeop and Chansik Park</i> | [ICCEPM-172] Key Success Factors for Implementing Modular Integrated Construction Projects - A Literature Mining Approach <i>Ibrahim Yahaya Wuni and Geoffrey Qiping Shen</i> | [ICCEPM-87] Review of Construction Business Intelligence Research <i>Seunghwan Baek, Seung Heon Han, Sungmin Yun and Wooyong Jung</i> |
| 14:20 – 14:30 | [ICCEPM-181] Better Management (Risk and Change) through NEC Contracts in Hong Kong <i>Chu Hoi TUNG, Shoeb Ahmed MEMON and Arshad Ali JAVED</i> | [ICCEPM-209] Issues of New Technological Trends in Nuclear Power Plant (NPPs) for Standardized Breakdown Structure <i>Dagem Derese Gebremichael, Yunsub Lee and Youngsoo Jung</i> | [ICCEPM-204] Development of a Collaboration Recommendation Model between Global Engineering Companies using Link Prediction <i>Youngsu Yu and Bonsang Koo</i> |
| 14:30 – 14:40 | Q&A for all papers in this session | Q&A for all papers in this session | [ICCEPM-206] Online Multi-Task Learning and Wearable Biosensor-based Detection of Multiple Seniors' Stress in Daily Interaction with the Urban Environment <i>Gaang Lee, Houtan Jebelli and Sanghyun Lee</i> |
| 14:40 – 15:00 | | | Q&A for all papers in this session |
| 15:00 – 15:15 | Break | | |
| | Intelligent Construction Automation I (F1) (4) | Sustainability Construction and Management III (F2) (3) | Big Data and AI Learning II (F3) (3) |
| | Dr. Hongling GUO Tsinghua University | Dr. Yi TAN Shenzhen University | Dr. Jun MA University of Hong Kong |
| 15:15 – 15:25 | [ICCEPM-197] Measuring Productivity Improvement by Machine Guidance through Worksampling in Earthwork <i>Julee Eom, Youngcheol Kang, Yongsei Lee and Pyungho Choi</i> | [IPC-30] Optimization Algorithms for Construction Site Layout Planning: A Review <i>Zhongya Mei, Maozeng Xu, Siyu Luo and Yi Tan</i> | [IPC-52] Data-driven Design for Modular High-rise Residential Buildings Under Wind-induced Ventilation <i>Vincent J.L. Gan, Jack C.P. Cheng, C.M. Chan and Jun Ma</i> |
| 15:25 – 15:35 | [ICCEPM-198] A framework for Developing the Automated Management System of Environmental Complaints in Construction Projects <i>Juwon Hong, Hyuna Kang, Taehoon Hong, Jongbaek An and Seunghoon Jung</i> | [ICCEPM-90] "Standard Model" Approach to Building Projects in the UK and Potential Role of Project Team to Mitigate any Local Difference ~ from International Developer's Perspective <i>Koji Tanaka</i> | [ICCEPM-32] Field Test of Automated Activity Classification Using Acceleration Signals from a Wristband <i>Yue Gong and JoonOh Seo</i> |
| 15:35 – 15:45 | [ICCEPM-191] Image Processing-based Object Recognition Approach for Automatic Operation of Cranes <i>Ying Zhou, Hongling Guo, Ling Ma and Zhitian Zhang</i> | [ICCEPM-186] Influencing Variables and Keywords of Technology Strategy for Modernized Hanok Research <i>Yeheun Jeong, Yunsub Lee, Seunghye Kang, Zhenhui Jin and Youngsoo Jung</i> | [IPC-22] LSTM Based Advance Rate Predictive Model When Shield Tunneling in Mixed Ground Condition <i>Qiang Wang, Xiongyao Xie, Yu Huang, Haozheng Wang and Yingxin Zhou</i> |
| 15:45 – 15:55 | Q&A for all papers in this session | Q&A for all papers in this session | Q&A for all papers in this session |
| 15:55 – 16:15 | | | |

| | Intelligent Construction Automation II (G1) (4) | Sustainability Construction and Management IV (G2) (3) | Big Data and AI Learning III (G3) (3) |
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| | Dr. Vincent GAN National University of Singapore | Dr. Choongwan KOO Incheon National University | Dr. Jung In KIM City University of Hong Kong |
| 16:15 – 16:25 | [IPC-44] Prediction of Building Energy Use Intensity and Detection of Outliers with Bagging Regression Models <i>Zheng Li, Yuexiong Ding, Vincent Gan and Jun Ma</i> | [IPC-55] The Need for Capacity Building of SMES for Lean Construction Adoption: A Literature Review <i>Emmanuel Ankomah, Joshua Ayarkwa and Agyekum Kofi</i> | [IPC-47] BIM and Computer Vision Integrated Approach for Indoor Positioning and Rescue Routing <i>Hui Deng, Zhibin Ou, Genjie Zhang, Yichuan Deng and Yu Wang</i> |
| 16:25 – 16:35 | [IPC-51] Spatial-Temporal Ability Development Using Unmanned Aerial Vehicle (UAV) Visualizations from Construction Projects <i>Ivan Matis and Pavlo Antonenko</i> | [ICCEPM-106] A Decision Support Model for Intelligent Facility Management through the Digital Transformation <i>Junsoo Lee, Kang Hyun Kim, Seung Hyun Cha and Choongwan Koo</i> | [ICCEPM-126] Real-time Knowledge Structure Mapping from Twitter for Damage Information Retrieval during a Disaster <i>Jiu Sohn, Yohan Kim, Somjin Park and Hyoungkwan Kim</i> |
| 16:35 – 16:45 | [ICCEPM-145] Real-time Automated Detection of Construction Noise Sources based on Convolutional Neural Networks <i>Seunghoon Jung, Hyuna Kang, Juwon Hong, Taehoon Hong, Minhyun Lee and Jimin Kim</i> | [ICCEPM-174] Dynamic Sustainability Assessment of Road Projects <i>Sneha Kaira, Sherif Mohamed and Anisur Rahman</i> | [ICCEPM-207] The Architecture of an Intelligent Digital Twin for a Cyber-Physical Route-Finding System in Smart Cities <i>Mahmoud Habibnezhad, Shayan Shayesteh, Yizhi Liu, Mohammad Sadra Fardhosseini and Houtan Jebelli</i> |
| 16:45 – 16:55 | [ICCEPM-179] Real-time Prediction on the Slurry Concentration of Cutter Suction Dredgers using an Ensemble Learning Algorithm <i>Shuai Han, Mingchao Li, Heng Li, Huijing Tian, Liang Qin and Jinfeng Li</i> | Q&A for all papers in this session | Q&A for all papers in this session |
| 16:55 – 17:15 | Q&A for all papers in this session | | |
| 17:15 – 17:45 | Break | | |
| 17:45 – 18:30 | Awards and Closing Ceremony | | |