17th East Asia-Pacific Conference on Structural Engineering and Construction (EASEC-17)

Program Booklet

Organized by:

Centre for Advanced Materials and Engineering

Department of Civil and Environmental Engineering, National University of Singapore

NUS National University of Singapore

Sponsored by:

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Preface

It is our pleasure to welcome you to the 17th East Asia-Pacific Conference on Structural Engineering and Construction (EASEC-17) will be held on 27–30 June 2022 through the online platform. The conference is hosted by the Centre for Advanced Materials and Structures, Department of Civil and Environmental Engineering, National University of Singapore

The objective of the conference is to provide a forum for professional structural and construction engineers and researchers to present recent progresses in research and development, and to report implementation of new tools and technologies in practical applications.

The EASEC conference was founded by Professor Fumio Nishino, and the first conference was held in Bangkok during January 15-17, 1986. Thereafter, the conference has been held in Thailand (1989, 2006), China (1991), South Korea (1993), Australia (1995, 2019), Chinese Taipai (1998, 2008), Japan (1999, 2013), Singapore (2001), Indonesia (2003), Hong Kong SAR (2011) and Vietnam (2016).

The technical program of EASEC-17 includes 10 keynote speeches, 16 symposia and 197 presentations by authors from 16 countries. EASEC-17 is privileged to be the first international conference to collaborate with the top journal, *Engineering Structures*, on a new publication scheme, in which authors for the selected high-quality papers will be invited to submit an extended version of their paper for consideration of publications in *Engineering Structures*.

This conference could not have been organized successfully without the generous financial support from our Gold sponsor, HEXAGON, and Silver Sponsor, Worley.

The organizing committee is indebted to the authors for the efforts in preparing their papers and for sharing their research with us during the conference. We would also like to extend our deep appreciation to the members from the international steering committee, the International Scientific Committee, paper reviewers and judges for the EASEC Nishino Medal and Prize, EASEC Young Researcher Award and the EASEC-17 Best Young Researcher's Paper Award for their understanding, support, technical advice and assistance.

On behalf of the Organizing Committee, we warmly welcome you to EASEC-17 and we hope you would have a fruitful time in the conference, get re-acquainted with old friends, make new friends, and build a stronger community for EASEC.

Local Organizing Committee
17th East Asia-Pacific Conference on Structural Engineering and Construction

Committees

International Steering Committee

Prof. FUJINO, Y., Japan (Chairman Emeritus)
Prof. KANOK-NUKULCHAI, W., Thailand (Chairman Emeritus)
Prof. KITIPORNCHAI, S., Australia (Chairman Emeritus)
Prof. YANG, Y. B., Taiwan (Chairman Emeritus)
Prof. UEDA, T., Japan (Chairman)
Prof. LEU, L. J., Taiwan (Deputy Chairman)
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A/Prof. LAM, H. F., Hong Kong SAR (General Secretary)
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Prof. CHEN, C. S., Taiwan (Committee Member)
Prof. CHEN, Y. Y., China (Committee Member)
Prof. CHEUNG, S. O., Hong Kong SAR (Committee Member)
Prof. CHIU, G., USA (Committee Member)
Prof. CHO, Jae-Yeol, South Korea (Committee Member)
Dr. DAO, Vinh, Australia (Committee Member)
Prof. GUAN, Hong, Australia (Committee Member)
Prof. HAN, Lin-hai, P. R. China (Committee Member)
Prof. HAO, Hong, Australia (Committee Member)
Prof. HAO, Jiping, P. R. China (Committee Member)
Prof. HO, Johnny, P. R. China (Committee Member)
Prof. HOANG, N., Vietnam (Committee Member)
Prof. HOEDAJANTO, D., Indonesia (Committee Member)
Prof. KONG, Jung Sik, South Korea (Committee Member)
Prof. LOO, Y. C., Australia (Committee Member)
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Prof. MATSUMOTO, T., Japan (Committee Member)
Prof. NANAKORN, Pruettha, Thailand (Committee Member)
Prof. NIWA, J., Japan (Committee Member)
Prof. OKUI, Y., Japan (Committee Member)
Prof. PAN, T. C., Singapore (Committee Member)
Prof. QUEK, Ser Tong, Singapore (Committee Member)
Prof. SUN, L. M., China (Committee Member)
Prof. TORERO, José L., UK (Committee Member)
Prof. WAN, Hamidon, Malaysia (Committee Member)
Prof. WARNITCHAI, P., Thailand (Committee Member)
Prof. YEH, L. P., China (Committee Member)

International Scientific Committee

PROF. CAO Hongyou, Wuhan University of Technology
DR. CELIK Kemal, NYU Abu Dhabi
A/PROF. CHAN Tak Ming, The Hongkong Polytechnic University
DR. CHONG Adrian, National University of Singapore
DR. DAO Vinh, University of Queensland
PROF. DUAN Wenhui, Monash University
PROF. DUAN Yuanfeng, Zhejiang University

DR. FANG Yihai, Monash University
DR. GAN Mark, National University of Singapore
DR. GAN Vincent, National University of Singapore
PROF. HO Johnny, Guangzhou University
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PROF. JIANG Jinyang, Southeast University
DR. LIN Alexander, National University of Singapore
PROF. LU Yujie, Tongji University
PROF. MARUYAMA Ippei, Tokyo University
A/PROF. MOON Juhyuk, Seoul National University
A/PROF. NGUYEN Giang, The University of Adelaide
A/PROF. NIE Xin, Tsinghua University
A/PROF. QIAN Shunzhi, Nanyang Technological University
PROF RAPHAEL Benny, Indian Institute of Technology Madras
PROF. SANJAYAN Jay, Swinburne University of Technology
PROF. SANTHANAM Manu, Indian Institute of Technology Madras
PROF. SHI Gang, Tsinghua University
PROF. SINGH Indra Vir, Indian Institute of Technology Roorkee
DR. WANG Qian, National University of Singapore
A/PROF. WANG Qiang, Tsinghua University
PROF. WANG Wei, Tongji University
PROF. XIAO Jianzhuang, Tongji University
PROF. YAN Jiabao, Tianjin University
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PROF. YANG Jian, Shanghai Jiao Tong University
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PROF. ZHANG Yunsheng, Lanzhou University of Technology
PROF. ZHANG Zuhua, Hunan University
DR. ZHOU Hongyu Nick, The University of Tennessee, Knoxville

Local Organizing Committee

PROF. LIEW Jat Yuen Richard, National University of Singapore (Advisor)
A/PROF. QIAN Xudong, National University of Singapore (Chair)
A/PROF. PANG Sze Dai, National University of Singapore (Co-chair)
A/PROF. Poh Leong Hien, National University of Singapore (Secretary)
DR. GENG Guoqing, National University of Singapore (Conference Program Chair)
DR. DU Hongjian, National University of Singapore (Treasurer)
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DR. LI Yuzhu Pearl, National University of Singapore (Member)
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PROF. TAN Kiang Hwee, National University of Singapore (Member)
A/PROF. TAN Vincent, National University of Singapore (Member)
DR. YEOH Ker-Wei Justin, National University of Singapore (Member)

Acknowledgments

The following graduate students, research fellows and staff have generously contributed to the organization of EASEC-17. Their efforts are deeply appreciated.

Dr Liuyang Feng, Dr Tianyao Liu, Mr Cheng Chen, Mr Le Wang, Mr Zhongbo Yuan, Mr Zhiyu Luo, Mr Weishuo Lyu, Mr Zhe Zhang, Mr Yu Yan, Mr Lianyao Xiong, Ms Yuchen Hu, Mr Sit Beng Chiat, Ms Juliana Binte Miswan and Ms Norela Bte Buang.

Sponsors

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Awards

1. EASEC Nishino Medal and Prize

During the period 1984–1985, Professor Fumio Nishino (1936-2007) and his colleagues at the Asian Institute of Technology established the organizational structure for the East Asia-Pacific Conference series on Structural Engineering and Construction (EASEC), an initiative that led to the first EASEC conference in Bangkok in January 1986. In the subsequent three decades EASEC has become a premier conference series having to date 17 conferences held in different cities in Asia. His contributions in founding and promoting EASEC had been enormous and the success of EASEC was heavily due to his enthusiastic and ceaseless efforts. In addition, he had worked actively and successfully in promoting the discipline of structural engineering and construction in the Asia region and beyond.

In recognition of his efforts, initiatives and achievements, the EASEC International Steering Committee proposes to establish a medal and two prizes in the honor of Prof. Nishino, so that henceforth he will be remembered formally by the EASEC community every time the Conference is held.

The awards and commendations will be made in two categories as follows:

The Nishino Medal: to be awarded at each EASEC conference to a distinguished senior engineer who has been judged to have made internationally recognized contributions in the area of structural engineering and construction through research, development and/or professional practice in the Asia-Pacific region. Past recipients of the Nishino Medal include, Professor Chien Ming Wang (University of Queensland) in 2019, Professor Sritawat Kitipornchai (University of Queensland) in 2017, Professor Yeong-Bin Yang (National Taiwan University) in 2016, Professor Yozo Fujino (University of Tokyo) in 2013, Professor Sung-Pil Chang (Seoul National University) in 2011, Professor Worsak Kanok-Nukulchai (Asian Institute of Technology) in 2008.

The Nishino Prize: to be awarded concurrently at each EASEC conference to a young engineer (age below 45 years) from the Asia-Pacific region who has made significant contributions and shown potential for great future achievements in the area of structural engineering and construction through research, development and/or practice. Past recipients of the Nishino Prize include Dr. Xudong Qian (National University of Singapore) and Dr. Jun Li (Curtin University) in 2019, Dr. Songye Zhu (Hong Kong Polytechnic University) and Dr. Hongwei Huang (Tongji University) in 2017, Dr. Ching Tai Ng (University of Adelaide) in 2016, Mr. Kenichi Kata (Sumitomo Mitsui Construction Co., Ltd.) and Prof. Yong Xia (Hong Kong Polytechnic University) in 2013, Dr. Kohei Nagai (University of Tokyo) and Prof. Siu-Kui Au (City University of Hong Kong) in 2011, Mr. Chi-Heng Chiang (CECI Engineering Consultants, Inc.) and Prof. Xuehui An (Tsinghua University) in 2008.

2. EASEC Young Researcher Award

The EASEC Young Researcher/Engineer Award is to be awarded to a young researcher/engineer (age below 35 years) from the Asia-Pacific region who has shown potential for great future achievements in the area of structural engineering and construction through research, development and/or practice. Recipients of the EASEC Young Researcher/Engineering Award 2019 are Dr. Yang Jiahua (Tongji University) and Dr. Wang Bin, (Kyoto University).

3. EASEC-17 Best Young Researcher's Paper Award

Three papers will be selected by the organizing committee for the Best Young Researcher's Paper Award. If you wish to be considered, you must:

1) be below 35 years old as of 30th June 2022
2) be the first author and presenter of a full paper

Technical Program Overview

The time indicated below are based on Singapore time (GMT +8)

Time	27/6/2022
	Opening Ceremony
zoom details	https://nus-sg.zoom.us/j/88683276911?pwd=Wnc4alR6RVZwYlRKRkJnSTZ0VkI5dz09
	meeting ID: 886 8327 6911; password: Easec17
1800-1810	**Opening Address by EASEC ISC chair**
1810-1820	**Opening Address by Local Organizer Committee chair**
1820-1830	**Award Presentation - Nishino Medal and Prize, EASEC Young Researcher Award**
	Master of Ceremony: Guoqing GENG
1830-1915	**"Metal additive manufacturing in construction: Developments and opportunities" - Prof. Leroy Gardner, Imperial College London**
1915-2000	**"Volume changes and water distribution in internally-cured High-Performance and Ultra-High-Performance Concrete" - Prof. Pietro Lura, ETH Zurich**
	Session Co-chairs: Tamon UEDA and Chien Ming WANG

Time	28/6/2022
	Keynote Session
zoom details	https://nus-sg.zoom.us/j/88683276911?pwd=Wnc4alR6RVZwYlRKRkJnSTZ0VkI5dz09
	meeting ID: 886 8327 6911; password: Easec17
1100-1145	**"Graphene Origami Enabled Metamaterial Structures" - Prof. Jie YANG, RMIT University**
1145-1230	**"Towards a resilient and abundant urban bay under climate change through adaptation and mitigation measures linked with ecosystem services" - Prof. Jun Sasaki, University of Tokyo**
	Session Co-chairs: Sritawat KITIPORNCHAI and Paul H.F. LAM
1230-1330	Lunch

Time	28/6/2022					
1330-1530	**Symposium 1: Sustainable Binding Materials**	**Symposium 2A: Seismic Resilient Structures**	**Symposium 4: Smart Construction & Management**	**Parallel session A: Advanced Transportation Infrastructure and System**	**Parallel session B: Composite Materials and Structures**	**Symposium 5A: Teaching and Learning During and After Pandemic**
	Chairs: Guoqing GENG and Jiaqi LI	**Chairs: Songye ZHU and Bin WANG**	**Chairs: Justin Ker-Wei YEOH and Qian WANG**	**Chairs: Lihai ZHANG and Xudong QIAN**	**Chairs: Johnny HO and Binglin LAI**	**Chairs: Hongjian DU and Sze Dai PANG**
zoom details	https://nus-sg.zoom.us/j/88413807610?pwd=NWNyZTNuUDVzeENnWmlEcjl4NGw3UT09	https://nus-sg.zoom.us/j/88678900196?pwd=Und1WUxFdVZXdWZGdHFZK1B0L2dWZz09	https://nus-sg.zoom.us/j/87352012480?pwd=UXpPTFVIYmQya29uaFpMRWR3MzJuQT09	https://nus-sg.zoom.us/j/88226701942?pwd=Z2Z3R0xIN0FFMis0MHJPYlcwdThuQT09	https://nus-sg.zoom.us/j/84657799662?pwd=VU5UYjZUNFdmMlJxNm05ZkFQamhEUT09	https://nus-sg.zoom.us/j/82495231141?pwd=TWNnSkNnUFgxOGRwakUwaXpTMHdDdz09
	meeting ID: 884 1380 7610 password: Easec17	meeting ID: 886 7890 0196 password: Easec17	meeting ID: 873 5201 2480 password: Easec17	meeting ID: 882 2670 1942 password: Easec17	meeting ID: 846 5779 9662 password: Easec17	meeting ID: 824 9523 1141 password: Easec17
1530-1545	Break					
Time	**Keynote Session**					
zoom details	https://nus-sg.zoom.us/j/88683276911?pwd=Wnc4alR6RVZwYlRKRkJnSTZ0VkI5dz09					
	meeting ID: 886 8327 6911; password: Easec17					
1545-1630	**"Digital-based Technology for Smart Constructions" - Dr. Sung-min CHO, South Korea government R&D project for smart constructions**					
	Session Chair: Ser-Tong QUEK					
1630-1645	Break					
1645-1845	**Parallel session C: Advanced and Sustainable Concrete Materials**	**Symposium 2B: Seismic Resilient Structures**	**Symposium 3: The Resilience of Steel and Composite Structures**	**Symposium 6: Resilient Infrastructural Solutions**	**Parallel session G: Disaster Mitigation**	**Symposium 5B: Teaching and Learning During and After Pandemic**
	Chairs: Guoqing GENG and Jiaqi LI	**Chairs: Ying ZHOU and Bin WANG**	**Chairs: Liuyang FENG and Shan LI**	**Chairs: Dongming ZHANG and Xiaogang HE**	**Chairs: Wei WANG and Vinh DAO**	**Chairs: Justin Ker-Wei YEOH and Pearl Yuzhu LI**
zoom details	https://nus-sg.zoom.us/j/88413807610?pwd=NWNyZTNuUDVzeENnWmlEcjl4NGw3UT09	https://nus-sg.zoom.us/j/88678900196?pwd=Und1WUxFdVZXdWZGdHFZK1B0L2dWZz09	https://nus-sg.zoom.us/j/87352012480?pwd=UXpPTFVIYmQya29uaFpMRWR3MzJuQT09	https://nus-sg.zoom.us/j/88226701942?pwd=Z2Z3R0xIN0FFMis0MHJPYlcwdThuQT09	https://nus-sg.zoom.us/j/84657799662?pwd=VU5UYjZUNFdmMlJxNm05ZkFQamhEUT09	https://nus-sg.zoom.us/j/82495231141?pwd=TWNnSkNnUFgxOGRwakUwaXpTMHdDdz09
	meeting ID: 884 1380 7610 password: Easec17	meeting ID: 886 7890 0196 password: Easec17	meeting ID: 873 5201 2480 password: Easec17	meeting ID: 882 2670 1942 password: Easec17	meeting ID: 846 5779 9662 password: Easec17	meeting ID: 824 9523 1141 password: Easec17

Time	29/6/2022				
	Keynote Session				
zoom details	https://nus-sg.zoom.us/j/88683276911?pwd=Wnc4alR6RVZwYlRKRkJnSTZ0VkI5dz09				
	meeting ID: 886 8327 6911; password: Easec17				
1100-1145	**"Multi-scale Digital Twin Driven Research Efforts Toward Resilient and Sustainable Smart Cities" - Prof. Shang-Hsien (Patrick) Hsieh, National Taiwan University**				
1145-1230	**"Research advances on geopolymer-based ultra-high performance concrete against blasts" - Prof. Chengqing Wu, University of Technology Sydney**				
	Session Co-chairs: David CHUA and Justin K.W. YEOH				
1230-1330	Lunch				
1330-1530	**Symposium 7A: High Performance Materials and Structures**	**Symposium 9: Structural Health Monitoring and Sensor Technologies for Civil Infrastructure**	**Symposium 11: Advanced Cementitious Composite and Applications in Protective Technology**	**Symposium 13: Advances in Design and Intelligent Optimization of Large-Span Bridge**	**Symposium 12A: Mechanics of Materials and Structures with Generalized Continua: Flexible Structures, Composite Materials, Optimizations, and Applications**
	Chairs: Jiabao YAN and Yanbo WANG	**Chairs: Kevin KUANG and Dan LI**	**Chairs: Fengling ZHANG and Rui ZHONG**	**Chairs: Hongyou CAO and Wenming ZHANG**	**Chairs: Pruettha NANAKORN and Duy VO**
zoom details	https://nus-sg.zoom.us/j/88413807610?pwd=NWNyZTNuUDVzeENnWmlEcjl4NGw3UT09	https://nus-sg.zoom.us/j/88678900196?pwd=Und1WUxFdVZXdWZGdHFZK1B0L2dWZz09	https://nus-sg.zoom.us/j/87352012480?pwd=UXpPTFVIYmQya29uaFpMRWR3MzJuQT09	https://nus-sg.zoom.us/j/88226701942?pwd=Z2Z3R0xIN0FFMis0MHJPYlcwdThuQT09	https://nus-sg.zoom.us/j/84657799662?pwd=VU5UYjZUNFdmMlJxNm05ZkFQamhEUT09
	meeting ID: 884 1380 7610 password: Easec17	meeting ID: 886 7890 0196 password: Easec17	meeting ID: 873 5201 2480 password: Easec17	meeting ID: 882 2670 1942 password: Easec17	meeting ID: 846 5779 9662 password: Easec17
1530-1545	Break				

Time	29/6/2022				
Time	**Keynote Session**				
zoom details	https://nus-sg.zoom.us/j/88683276911?pwd=Wnc4alR6RVZwYlRKRkJnSTZ0VkI5dz09				
	meeting ID: 886 8327 6911; password: Easec17				
1545-1630	**"Carbon Saving in Circular Building Materials" - Prof. Caijun Shi, Hunan University**				
	Session Chair: Hongjian DU				
1630-1645	Break				
1645-1845	**Symposium 7B: High Performance Materials and Structures**	**Symposium 16: Advances in Vibration Mitigation of Long-Span Bridges and High-Rise Structures**	**Symposium 15: Practice of Sustainable Urban Development**	**Symposium 8: Prefabricated Construction and Composite Structures**	**Symposium 10A: Bayesian System Identification of Civil Engineering Structures: Development and Application**
	Chairs: Yonghui WANG and Mingxiang XIONG	**Chairs: Lin CHEN and Yongkui WEN**	**Chairs: Kian Hau KONG and Paul Pang Awn ONG**	**Chairs: Zhenyu HUANG and Chao HOU**	**Chairs: Hua-Yi PENG and Tak-Ming Chan**
zoom details	https://nus-sg.zoom.us/j/88413807610?pwd=NWNyZTNuUDVzeENnWmlEcjl4NGw3UT09	https://nus-sg.zoom.us/j/88678900196?pwd=Und1WUxFdVZXdWZGdHFZK1B0L2dWZz09	https://nus-sg.zoom.us/j/87352012480?pwd=UXpPTFVIYmQya29uaFpMRWR3MzJuQT09	https://nus-sg.zoom.us/j/88226701942?pwd=Z2Z3R0xIN0FFMis0MHJPYlcwdThuQT09	https://nus-sg.zoom.us/j/84657799662?pwd=VU5UYjZUNFdmMlJxNm05ZkFQamhEUT09
	meeting ID: 884 1380 7610 password: Easec17	meeting ID: 886 7890 0196 password: Easec17	meeting ID: 873 5201 2480 password: Easec17	meeting ID: 882 2670 1942 password: Easec17	meeting ID: 846 5779 9662 password: Easec17

Time	30/6/2022				
	Keynote Session				
zoom details	https://nus-sg.zoom.us/j/88683276911?pwd=Wnc4alR6RVZwYlRKRkJnSTZ0VkI5dz09				
	meeting ID: 886 8327 6911; password: Easec17				
1100-1145	**"Coupling models for fluid-seabed interactions around marine structures" - Prof. Dong-Sheng JENG, Griffith University**				
1145-1230	**"Effective use of high strength S690 steel in construction and effects on their mechanical properties after welding" - Prof. Kwok-Fai CHUNG, The Hong Kong Polytechnic University**				
	Session Co-chairs: Xudong QIAN and Guoqing GENG				
1230-1330	Lunch				
1330-1530	**Parallel session D: Progressive Collapse and Ultimate Structural Resistance**	**Symposium 10: Bayesian System Identification of Civil Engineering Structures: Development and Application**	**Symposium 17: Intelligent Shield Tunnelling**	**Parallel session F: Engineering Design and Dynamics Structural Response**	**Symposium 12B: Mechanics of Materials and Structures with Generalized Continua: Flexible Structures, Composite Materials, Optimizations, and Applications**
	Chairs: Kang Hai TAN and Gang SHI	**Chairs: Hua-Yi PENG and Paul Heung Fai LAM**	**Chairs: Elton, Jian CHEN and Darren Siau Chen CHIAN**	**Chairs: Sze Dai PANG and Gary Jiarui LEI**	**Chairs: Pruettha NANAKORN and Duy VO**
zoom details	https://nus-sg.zoom.us/j/88413807610?pwd=NWNyZTNuUDVzeENnWmlEcjl4NGw3UT09	https://nus-sg.zoom.us/j/88678900196?pwd=Und1WUxFdVZXdWZGdHFZK1B0L2dWZz09	https://nus-sg.zoom.us/j/87352012480?pwd=UXpPTFVIYmQya29uaFpMRWR3MzJuQT09	https://nus-sg.zoom.us/j/88226701942?pwd=Z2Z3R0xIN0FFMis0MHJPYlcwdThuQT09	https://nus-sg.zoom.us/j/84657799662?pwd=VU5UYjZUNFdmMlJxNm05ZkFQamhEUT09
	meeting ID: 884 1380 7610 password: Easec17	meeting ID: 886 7890 0196 password: Easec17	meeting ID: 873 5201 2480 password: Easec17	meeting ID: 882 2670 1942 password: Easec17	meeting ID: 846 5779 9662 password: Easec17
Time	**Keynote Session**				
zoom details	https://nus-sg.zoom.us/j/88683276911?pwd=Wnc4alR6RVZwYlRKRkJnSTZ0VkI5dz09				
	meeting ID: 886 8327 6911; password: Easec17				
1545-1600	**Awardee Presentation: EASEC-17 Best Young Researcher's Paper Award**				
	Session Chair: Xudong QIAN				
1600-1615	**Closing Ceremony**				
	Master of Ceremony: Guoqing GENG				

Detailed Technical Program – 28 to 30 June 2022

Time	28/6/2022					
	Keynote Session					
zoom details	https://nus-sg.zoom.us/j/88683276911?pwd=Wnc4alR6RVZwYlRKRkJnSTZ0VkI5dz09					
	meeting ID: 886 8327 6911; password: Easec17					
1100-1145	**"Graphene Origami Enabled Metamaterial Structures" - Prof. Jie YANG, RMIT University**					
1145-1230	**"Towards a resilient and abundant urban bay under climate change through adaptation and mitigation measures linked with ecosystem services" - Prof. Jun Sasaki, University of Tokyo**					
	Session Co-chairs: Sritawat KITIPORNCHAI and Paul H.F. LAM					
1230-1330	Lunch					
1330-1530	**Symposium 1: Sustainable Binding Materials**	**Symposium 2A: Seismic Resilient Structures**	**Symposium 4: Smart Construction & Management**	**Parallel session A: Advanced Transportation Infrastructure and System**	**Parallel session B: Composite Materials and Structures**	**Symposium 5A: Teaching and Learning During and After Pandemic**
	Chairs: Guoqing GENG and Jiaqi LI	**Chairs: Songye ZHU and Bin WANG**	**Chairs: Justin Ker-Wei YEOH and Qian WANG**	**Chairs: Lihai ZHANG and Xudong QIAN**	**Chairs: Johnny HO and Binglin LAI**	**Chairs: Hongjian DU and Sze Dai PANG**
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	meeting ID: 884 1380 7610 password: Easec17	meeting ID: 886 7890 0196 password: Easec17	meeting ID: 873 5201 2480 password: Easec17	meeting ID: 882 2670 1942 password: Easec17	meeting ID: 846 5779 9662 password: Easec17	meeting ID: 824 9523 1141 password: Easec17
1330-1345	Study of Methods for Improving Strength and Durability of Low-Quality Recycled Aggregate Concrete - *R. Yuya, N. Matsuda, M. Kojima, T. Iyoda*	Development of Energy Dissipation Walls with Oil Dampers and Totally Reinforced Support Members Using Pre-Stress - *R. Sakamoto, K. Matsuda, S. Hanai*	Potential Application of Smart Contracts in the Indonesian Construction Industry - *Kartika Wulandary, Kriengsak Panuwatwanich, Michael Ward Henry*	Application of ai-based deformation extract function from a road surface video to a road pavement condition assessment system - *Hisao Emoto, Miori Numata, Atsuki Shiga*	Numerical Simulation and Data-Driven Analysis on the Biaxial Behavior of High Strength Steel Reinforced Concrete Composite Columns - *Bing-Lin Lai, Jia-Hui Zhao, J. Y. Richard Liew, Wei-Kai Tan*	Reflections and Results from an Interdisciplinary Module Spanning Three Disciplines for Sustainable Built Environments - *Nyuk Hien Wong, Stephen En Rong Tay*
1345-1400	A Study on Strength and Durability of Mortar Using Low-Quality Recycled Fine Aggregate with Accelerated Carbonation - *Y. Inoue, N. Matsuda, Y. Nishioka, T. Iyoda*	Feasibility analysis of a hybrid energy dissipation mechnism for seismic isolation applications - *Peng Chen, Bin Wang*	Construction Process Simulation Facing Digital Twin - *Miaosi Dong, Bin Yang, Shanshan Jiang, Boda Liu*	Bridge roughness identification using response of a moving two-axle vehicle - *Z.L. Wang, B.Q. Wang, Y.B. Yang*	Experimental study on the uni-axial behaviour of MSCFST columns considering concrete's wet packing density - *J.H. Mo, M.R. Zeng, S.J. Yang, J.C.M. Ho, M.H. Lai*	Navigating the challenges of teaching and learning engineering mechanics during pandemic through hands-on experiential learning - *Jessey Lee*

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1400-1415	Experimental Study to Improve Performance of Two-Stage Concrete without Injection Focusing on the Interfacial Transition Zone - *Karen Midori Masunaga, Tomoki Nagoya, Takeshi Iyoda*	Comparative Numerical Study on Efficiency of Various Energy Dissipating Devices used in Hybrid Post-Tensioned Shear Wall - *Shubham Tiwari, S.R. Dash, G. Mondal*	Establishment and application of multi-agent simulation system based on on-site construction performers - *B.D. Liu, B. Yang, Yilong Han, J.Z. Xiao, M.S. Dong*	FACTORS AFFECTING THE DETERIORATION OF BITUMINOUS PAVEMENTS IN KHYBER PAKHTUNKHWA PROVINCE, PAKISTAN - *Azam Amir, Michael Henry*	Load-carrying capacity of CFST columns: Current design rules assessment - *X.L. Ou, J.C.M. Ho, M.H. Lai*	Understanding Sustainability Practices through Sustainability Reports and Its Impact on Organizational Financial Performance - *Mavian Xin Yi Tay, Stephen En Rong Tay*
1415-1430	Application of granite fines to substitute sand in Concrete production - *Shunzhi Qian, Kang Hai Tan, Ziyang Li, Namyo Salim Lim, Lu Jinping, Wong Sook Fun*	Three-dimensional FEM simulation of hysteretic performance of traditional Chinese dou-gong connections - *Xiaogang Zhang, Xiaobin Song, Jingliang Dong*	Dynamic Neural Network for Structural Model Updating in Bridge Construction Process - *Z.Y. Tang, T. Yin, G.D. Han*	Assessing the sustainability characteristics of modified asphalt concrete - *Grace Muna, M. Henry*	Experimental study on the behaviour of CFST columns with steel slag concrete under axial compression - *Y.H. Lin, Y.Y. Jin, J.C.M. Ho, M.H. Lai*	Broadening the perspective of the roles of civil engineers – a freshmen module on how engineers solve real-world problems - *Kevin Kuang, Weng Tat Chan*
1430-1445	Sustainable Engineering Cementitious Composites (ECC) with granite fine as fine filler - *Ziyang Li, Bing Lu, Kang Hai Tan, Shunzhi Qian*	Structural control using tuned Fluid Viscous Dampers (tFVD) for Performance Based Seismic Design - *Arun Puthanpurayil, Rob Jury, David Wood, Weng Yuen Kam*	Digital Fabrication for DfMA of a Prefabricated Bridge Pier - *TK. Kim, DC. Nguyen, CS. Shim*	Incremental dynamic analysis on a bridge with varying-friction functional bearing - *Li-Wei Liu, Kuang-Yen Liu, Tsai-Ling Tsai*	Experimental study on the post-fracture property of laminated glass - *Zhifei CHEN; Suwen CHEN; Xing CHEN*	Enhanced learning opportunities in Mechanics from TechnoLab™ mini-experiments using videos (for online) and hands-on (for on campus) - *Nicholas Haritos, Jessey Lee*

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1445-1500	Effects of Various Ions in Seawater on Chloride Ion Behavior in Mortar using Ground Granulated Blast-Furnace Slag - *Takuma Nakada, Yuko Ogawa, Kenji Kawai, Riya Catherine George*	Seismic behavior of high-rise modular steel constructions with various module layouts - *Fengwei Shi, Yang Ding, Liang Zong*	Study on the open data system for infrastructure maintenance and management - *Junha Hwang, Kei Kawamura, Shuji Sawamura*	Investigation on recycling application of waste rubber tyres in concrete - *Shengtian Zhai, Yunsheng Zhang, Laibao Liu*	Study on Mechanism of Pore Modification by Polymer Particles - *R. Yahiro, T. Kanda, K. Nishimura, T. Iyoda*	SafeSim Design: A Digital Game-Based Learning Approach to Address Design for Safety (DfS) Competency - *Sufiana Safiena, Juliana Tay, Yang Miang Goh, Michelle Lim*
1500-1515		Research on Seismic Behavior of CFT-Frame-Buckling Restrained Steel Plate Shear Wall Structures Using Recycled Aggregate Concrete - *Amer Mohammed, Yansheng Du, Zhihua Chen, Jin Huang*	Road Development Risks and Challenges in the Philippines - *Kenneth Edward Torrella Fernando, Michael Henry*	Influence of environmental changes in signal energy based damage identification in bridges under traffic load - *Riya Catherine GEORGE*	BEHAVIOUR OF BAMBOO SCRIMBER BEAM-COLUMN JOINTS WITH BOLTED STEEL ANGLES AND T-STUBS - *Jun Xiong, Shurong Zhou, Shao-Bo Kang*	Online Laboratory Class in Structural Concrete Design - *Hongjian Du*
1515-1530					Service load level of mortise-tenon joints in Chinese traditional timber structures - *Y Zhang, X.B Song*	
1530-1545	Break					

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	Keynote Session					
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	meeting ID: 886 8327 6911; password: Easec17					
1545-1630	**"Digital-based Technology for Smart Constructions" - Dr. Sung-min CHO, South Korea government R&D project for smart constructions**					
	Session Chair: Ser-Tong QUEK					
1630-1645	Break					
1645-1845	**Parallel session C: Advanced and Sustainable Concrete Materials**	**Symposium 2B: Seismic Resilient Structures**	**Symposium 3: The Resilience of Steel and Composite Structures**	**Symposium 6: Resilient Infrastructural Solutions**	**Parallel session G: Disaster Mitigation**	**Symposium 5B: Teaching and Learning During and After Pandemic**
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1645-1700	DEF Expansion Behavior of Hardened Cement Using Fine Aggregate generated by Blast Furnace Air Cooling Slag - *Y.Ohashi, T.Iyoda*	Seismic Response Mitigation of Atrium Buildings with Truss-IMD System - *Siyuan Li, Yung-Tsang Chen*	Axial Behavior of High-Strength Rectangular Concrete-Filled Steel Tube Long Columns - *Zhichao Lai, Jie Yan, Dong Li*	Analysis of the Clearance Time of Roadblock Events Caused by Geohazards in Bhutan - *Dhan Raj Chhetri, Michael Henry*	FLEXURAL PERFORMANCE OF MILL CUT STEEL FIBER REINFORCED CONCRETE BEAM DEGRADED BY MILD CORROSION - *Khanh Minh Vo, Withit Pansuk, Thi Nguyen Cao, Hai Yen Thi Nguyen*	A study on Faculty Members' Teaching and Learning Inquiry projects submitted as Blogposts during the Pandemic - *Mark Gan*
1700-1715	Circulating incineration fly ash and marine clay as sustainable cementitious material - *Guoqing GENG, Qiaorui WANG*	Seismic Performance of Isolated Liquid Storage Tanks Supplemented with Negative Stiffness and Inerter Based Dampers - *Naqeeb Ul Islam, R.S. Jangid*	Tests on low cycle fatigue behavior of a stainless-clad bimetallic steel - *Xiaowei Liao, Liuyang Feng, Huiyong Ban*	Research on cumulative plastic deformation of the soft clay under cyclic loading - *Xubing Xu, Zhendong Cui, Yonglai Zheng*	Structures under Blast Loads from Academic Research into Engineering Applications: Advances and Limitations - *Tin Do, Asher Gehl*	Scenario-based Student Generated Questions for Active Learning and Authentic Assessments – Results from Implementation Across Two Modules - *Mavian Xin Yi Tay, Stephen En Rong Tay*

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1645-1845	**Parallel session C: Advanced and Sustainable Concrete Materials**	**Symposium 2B: Seismic Resilient Structures**	**Symposium 3: The Resilience of Steel and Composite Structures**	**Symposium 6: Resilient Infrastructural Solutions**	**Parallel session G: Disaster Mitigation**	**Symposium 5B: Teaching and Learning During and After Pandemic**
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1715-1730	Carbonation of Granite-dust Concrete in Tropical Environment - *Ni Zhen, Xudong Qian*	Experimental study on seismic behavior of liquid storage tanks subjected to vertical earthquakes - *Jieying Wu, Q. Q. Yu, X. L. Gu*	On the Accurate Strain Measurement in Spilt Hopkinson Tensile Bar Tests - *Cheng Chen, Xudong Qian*	Improved Vehicle Scanning Method for Bridge Damage Detection - *D.S. Yang, C.M. Wang, W.H. Duan*	Free and forced vibration characteristics of functionally graded sandwich beam with GPL-reinforced porous core - *Tran Quang Hung, Do Minh Duc, Tran Minh Tu*	Evolution of Experiential Learning Before and During the COVID-19 Pandemic - *Paul Ong*
1730-1745	Carbonation resistance of Portland blast furnace slag cement type B concrete internally cured by using roof-tile waste aggregate - *Yusuke Inoue, Yuko Ogawa, Kenji Kawai, Riya Catherine George*	Hybrid Test of Viscoelastically Damped Frame Structures under Different Seismic Waves - *Yao-Rong Dong, Zhao-Dong Xu, Ying-Qing Guo, Qiang-Qiang Li*	A New Design Guide for Fire Resistance of High-Strength Composite Beam-Columns - *Shan Li, J.Y.Richard Liew*	POSITIONING ACCURACY COMPARISON OF RTK RECEIVERS USED FOR DISASTER INVESTIGATION - *Toru YAMANO, Kai KIRIYAMA, Osamu OKAMOTO, Kei KAWAMURA*	Effects of electromagnetic wave on the microstructure and hydration kinetics evolution of protective cementitious materials with ultra low water/binder ratio - *Rui Yu, Yuan Feng, Jingjing Zhang*	Identification of Critical Factors Influencing Students' Engagement and Satisfaction of Online Live Learning in Higher Education - *Lei Zhu, Lina Zhang, Guifeng Zhu*
1745-1800	Strength Characteristics of Blast-Furnace Cement Mortar with Silicate-Type Surface Penetrants - *Futagami Kei, Kondo Takuya, Yokoi Katsunori*	Enhancing the Integral Seismic Resilience of a RC Wall Structure through Bi-Rocking System: Overview, Design and Pre-Test Evaluation- *Hao Wu, Wei, Ying Zhou. Xiaoying Zhu*	Adaptive Fatigue Assessment of Welded Plate Joints Based on Crack Measurements - *Liuyang Feng, Xudong Qian*	Corrosive Behavior of Structural Steel and Hot Dipped Galvanized Steel in the Central Part of Thailand by Atmospheric Exposure Test - *Bunya Chea, Taweep Chaisomphob, Takashi Matsumoto*	Seismic retrofit and resilience design as key sustainability strategies in earthquake regions - *Weng Yuen Kam*	Preliminary Implementation of Adaptive Learning for Teaching Structural Systems to Non-Engineering Students - *Xinping Hu, Yang Miang Goh, Alexander Lin, Qizhang Liu*

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1800-1815	Low-carbon Concrete Made with Waste Glass as SCM for Cement Replacement - *Zhiyu Luo, Hongjian Du*	Experimental and Numerical Investigations of a Low-Prestressed Self-Centering Energy Dissipative Brace - *Y. Xiao, Y. Zhou*	Compressive Behaviour of Circular Concrete Axially Loaded CFDST Stub Columns - *Xi-Feng Yan*	A Paradigm for Seismic Resilience Assessment of Subway System - *Chao Zhang*	Punching Shear Test on Flat Slabs Strengthened by Angle Plates - *Hussein Riyadh Taresh, Mohd Yazmil Md Yatim, Mohd Reza Azmi*	Benefits of Gamification to students learning of construction risk – *Justin K. W. Yeoh*
1815-1830		Development of novel SMA-based self-centering eccentrically braced frames and their seismic resilience assessment - *Zhipeng CHEN, Songye ZHU*		An analytical model to evaluate the resilience of shield tunnel linings and its application - *Xingtao Lin*	Punching shear performance of steel-UHPC-steel slabs considering composite action - *Z. Wang, J. Yan, Y. Lin, F. Fan*	
1830-1845				Dynamic properties of steel fiber-reinforced UHPC under direct tension - *Shaojun Cao, Xiaomeng Hou, Yu Yan, Pang Chen*		

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1100-1145	**"Multi-scale Digital Twin Driven Research Efforts Toward Resilient and Sustainable Smart Cities" - Prof. Shang-Hsien (Patrick) Hsieh, National Taiwan University**				
1145-1230	**"Research advances on geopolymer-based ultra-high performance concrete against blasts" - Prof. Chengqing Wu, University of Technology Sydney**				
	Session Co-chairs: David CHUA and Justin K.W. YEOH				
1230-1330	Lunch				
1330-1530	**Symposium 7A: High Performance Materials and Structures**	**Symposium 9: Structural Health Monitoring and Sensor Technologies for Civil Infrastructure**	**Symposium 11: Advanced Cementitious Composite and Applications in Protective Technology**	**Symposium 13: Advances in Design and Intelligent Optimization of Large-Span Bridge**	**Symposium 12A: Mechanics of Materials and Structures with Generalized Continua: Flexible Structures, Composite Materials, Optimizations, and Applications**
	Chairs: Jiabao YAN and Yanbo WANG	**Chairs: Kevin KUANG and Dan LI**	**Chairs: Fengling ZHANG and Rui ZHONG**	**Chairs: Hongyou CAO and Wenming ZHANG**	**Chairs: Pruettha NANAKORN and Duy VO**
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1330-1345	Constitutive modeling of structural steels considering the influence of strain history - *Yun Long Zhong, Yan Bo Wang, Guo Qiang Li*	Evaluation of the Application of Unmanned Aerial Vehicle Technology on Damage Inspection of Reinforced Concrete Buildings - *Jiehui Wang, Tamon Ueda*	Penetration performance and mechanism of novel matrix-free UHMWPE film laminates - *M.J. Cao, L. Chen, Q. Fang*	Mechanical Model for Three-tower Self-Anchored Suspension Bridge with Central Buckle - *Shuang Liu, Hongyou Cao, Zhijun Chen, Changyu Shao*	Nonlinear Vibrations of Deepwater Catenary Riser Subjected to Wave Excitation - *Nutwadee Lertchanchaikun, Karun Klaycham, Chainarong Athisakul, Somchai Chucheepsakul*
1345-1400	Experimental and Theoretical Study on the Shear Performance of Self-tapping Screw Connections of Light Steel-timber Composite Structures - *Anling Zhang, Jiadi Liu, Zhihua Chen, Xiangyuan Niu*	Capture of crack evolution for evaluation of concrete properties using dynamic mode decomposition - *Jixing CAO, Ser-Tong Quek, Yao Zhang*	Dynamic Response of Masonry Walls Strengthened with Engineered Cementitious Composites under Simulated Debris Flow - *Jie Yu, Zhifu Dong, Jiangtao Yu*	Study on time synchronization method for creating a cable surface image of Cable-Stayed bridge using image processing - *Z. Wei, K. Kawamura, T.Nakamura, M.Shiozaki*	Effects of High turbulence intensity on Dynamic Characteristics of Membrane Structure in Typhoon - *Dong Li, Yiteng Lin, Hongwei Huang*

Time	29/6/2022				
1330-1530	**Symposium 7A: High Performance Materials and Structures**	**Symposium 9: Structural Health Monitoring and Sensor Technologies for Civil Infrastructure**	**Symposium 11: Advanced Cementitious Composite and Applications in Protective Technology**	**Symposium 13: Advances in Design and Intelligent Optimization of Large-Span Bridge**	**Symposium 12A: Mechanics of Materials and Structures with Generalized Continua: Flexible Structures, Composite Materials, Optimizations, and Applications**
	Chairs: Jiabao YAN and Yanbo WANG	**Chairs: Kevin KUANG and Dan LI**	**Chairs: Fengling ZHANG and Rui ZHONG**	**Chairs: Hongyou CAO and Wenming ZHANG**	**Chairs: Pruettha NANAKORN and Duy VO**
zoom details	https://nus-sg.zoom.us/j/88413807610?pwd=NWNyZTNuUDVzeENnWmlEcjl4NGw3UT09	https://nus-sg.zoom.us/j/88678900196?pwd=Und1WUxFdVZXdWZGdHFZK1B0L2dWZz09	https://nus-sg.zoom.us/j/87352012480?pwd=UXpPTFVIYmQya29uaFpMRWR3MzJuQT09	https://nus-sg.zoom.us/j/88226701942?pwd=Z2Z3R0xIN0FFMis0MHJPYlcwdThuQT09	https://nus-sg.zoom.us/j/84657799662?pwd=VU5UYjZUNFdmMlJxNm05ZkFQamhEUT09
	meeting ID: 884 1380 7610 password: Easec17	meeting ID: 886 7890 0196 password: Easec17	meeting ID: 873 5201 2480 password: Easec17	meeting ID: 882 2670 1942 password: Easec17	meeting ID: 846 5779 9662 password: Easec17
1400-1415	INNOVATION OF UHPC STRUCTURES AND DESIGN METHOD IN BRIDGE STRUCTURES - *Yuqing Hu, Jingquan Wang*	Model Updating with Neural Network based on Component Model Synthesis - *Zihan Cao, Tao Yin*	Experimental investigation on compressive fatigue properties of ultra-high performance concrete containing coarse aggregate - *Lijian Li, Lihua Xu, Yin Chi, Le Huang*	Shape-finding and force-assessment of suspension bridges in the completed bridge state and under the concentrated live load - *Jiaqi Chang, Wenming Zhang*	Effects of Discretization Schemes on Free Vibration Analysis of Planar Beam Structures Using Isogeometric Timoshenko-Ehrenfest Beam Formulations - *Duc Van Nguyen, Duy Vo, Pruettha Nanakorn*
1415-1430	Behavior of circular ultra-high strength concrete-filled steel tube columns under unequal end moments - *Siqi Lin,Yan-Gang Zhao*	Crack assessment of beam using machine learning with augmented sensing - *Jin Ho Hwang, Hyun Woo Park*	Strain-hardening fiber reinforced cementitious composites with modified basalt fibers - *Zhiming Pang, Cong Lu, Jianxun Liu*	Analysis of Vehicle-Bridge Interaction Concerning Non-uniform Effect of Bridges - *Judy Yang*	Geometrically Nonlinear Behavior of L-shaped Frames Under Forces Applied at Different Positions - *Nghi Huu Duong, Duy Vo, Pruettha Nanakorn*
1430-1445	Research on the mechanism of FRP-confined concrete-filled steel tube column using high-strength materials - *Yansheng Du, Yutong Zhang, Dinghui Gao, Mingxuan Fu, Zhihua Chen*	Structural Health Monitoring of Steel-concrete Composite Beams Using Acoustic Emission - *Dan Li, Jia-Hao Nie, Jia-Bao Yan, Chen-Xun Hu, Peng Shen*	Tension Stiffening in Textile Reinforced Ultra-high Performance Concrete (TR-UHPC) and Synergistic Effects of Fibers - *Yiming Yao*	Dynamic Modal Parameters of an Extremely Lightweight Structure using a Gyroid Core for Bridge Bearings - *Pasakorn Sengsri, S. Kaewunruen*	Interfacial Displacement Discontinuity in Coated Substrate with Couple-Stress Effects - *W. Wongviboonsin, P.A. Gourgiotis, J. Rungamornrat*
1445-1500	Experimental Investigation of Circular Reinforced Concrete Columns Exposed to Elevated Temperatures - *Jia Xu, Riyad Aboutaha*	Predicting the modal frequencies of a cracked beam considering crack modes Ⅰ and Ⅱ - *Taejeong Lim, Hyun Woo Park*	Three-dimensional mesoscopic modelling of concrete confined by FRP under static and dynamic loading - *NYEMBO YA LUMBU LARS, Jinhua Zhang*	Exploring patterns in municipal bridge management issues and their relationship with municipal conditions in Hokkaido, Japan - *Michael Henry*	Mechanical properties of lattice specimens having a triangular pattern with different relative densities - *Itthidet Thawon,Pana Suttakul, Thongchai Fongsamootr, Yuttana Mona*

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1500-1515	Study on Tensile Properties of Locked Coil Wire Rope - *L. Guo, H. Liu, Z. Chen*	Deep learning-based Crack Detection and Classification for Concrete Structures Inspection - *Cuong Nguyen Kim, Kei Kawamura, Hideaki NaKamura*	Utilization of off-specification fly ash in preparing ultra-high-performance concrete (UHPC): mixture design, characterization, and life-cycle assessment - *Jiang Du, Weina Meng*	Dimensionless continuum model of vertical free vibration of spatial self-anchored suspension bridge - *Jianling Zhao, Fan Wang, Xiaoming Wang, Pei Tao, Pengfei Li*	Analytical Solution for Circular Microbeams with Strain Gradient Elasticity - *Zwe Yan Aung, Duy Vo, Toan Minh Le, Jaroon Rungamornrat*
1515-1530			Hydrophobic cement mortar incorporating waste clay brick powder - *Xiao Wang, Wei Tang, Shi Cong Kou, Bao Jian Zhan*	Assembly Tolerance Interval Inversion Method for Cable-stayed Bridge based on Bilayer Surrogate Model - *Fan Wang, Jianling Zhao, Xiaoming Wang, Pengfei Li, Pei Tao*	Investigation on buckling and low-cycle fatigue performance of high-strength steel bars HTRB600 - *Dianqi Wu, Yang Ding, Junsheng Su, Zhong-Xian Li*
1530-1545	Break				

Time	29/6/2022				
	Keynote Session				
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	meeting ID: 886 8327 6911; password: Easec17				
1545-1630	**"Carbon Saving in Circular Building Materials" - Prof. Caijun Shi, Hunan University**				
	Session Chair: Hongjian DU				
1630-1645	Break				
1645-1845	**Symposium 7B: High Performance Materials and Structures**	**Symposium 16: Advances in Vibration Mitigation of Long-Span Bridges and High-Rise Structures**	**Symposium 15: Practice of Sustainable Urban Development**	**Symposium 8: Prefabricated Construction and Composite Structures**	**Symposium 10A: Bayesian System Identification of Civil Engineering Structures: Development and Application**
	Chairs: Yonghui WANG and Mingxiang XIONG	**Chairs: Lin CHEN and Yongkui WEN**	**Chairs: Kian Hau KONG and Paul Pang Awn ONG**	**Chairs: Zhenyu HUANG and Chao HOU**	**Chairs: Hua-Yi PENG and Tak-Ming Chan**
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1645-1700	Behaviors of steel-concrete composite structures at cold-region low temperatures - *Jia-Bao Yan, Jian Xie*	Optimization of Damped Outriggers for Maximizing Multimode Damping of Long-span Bridges for Vibration Suppression - *Zhanhang Liu, Lin Chen, Limin Sun*	Influence Mechanism of Farmers' Sense of Gain in Tourism-oriented Rural Infrastructure Construction and Operation - *Hongtao Jia, Lei Zhu, Jing Du*	Numerical study on out-of-plane mechanical behavior of new type precast shear wall with unspliced vertical distribution bars - *Qiang Fu, Zhiwei Cao, Heng Dong*	Finite element model updating based on neural network ensemble - *Yuxuan He, Tao Yin*
1700-1715	Development of Novel Sigma-shaped Self-locking Inter-modular Joints for Robust Modular Steel Buildings - *Kashan Khan, Zhihua Chen, Xingwang Liu, Jia-Bao Yan, Jiadi Liu*	Double-track Nonlinear Energy Sink for Dynamic Response Control in Wind Turbine Tower - *Dong Li, ZhengYu Zhang, Xuhui Zhang*	Research on the Industry Acceptance and Promotion Path of Interim Payment in Civil Engineering Projects - *Lei Zhu, Hui Xiong*	Lightweight and Advance Precast Concrete System for Modular Building Construction - *Junxuan WANG, Kian Hau Kong, Richard Jat Yuen Liew*	Operational modal analysis of UHV transmission tower by a Bayesian method - *C. Zhao, Q. Sun, Y.M. Zhu, Y.H. Su*
1715-1730	Shear performance of interface between normal concrete and ultra-high performance concrete in cryogenic circumstance - *Yujie Chen, Jian Xie, Ercong Kang*	Multi-Stage Objective Algorithm for Accelerating the Structural Optimization of Tall Building Structure - *Xin Zhao, Gang Wang, Jie Yao*	EARTHQUAKES, REINFORCED CONCRETE STRUCTURES, AND CIRCULAR ECONOMY: A SYSTEMATIC REVIEW OF STUDIES - *Teklewoin Haile Fitwi*	Study of initial imperfection of concrete-filled square steel tube columns for direct analysis - *Zijuan ZHANG, Jiale XING, Yao-Peng LIU, Guochang LI*	Inverse Identification of Cyclic Constitutive Law of Structural Steels using Multi-objective Bayesian Optimization - *Bach Do, Makoto Ohsaki*

Time	29/6/2022				
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1730-1745	Effects of Arctic Low Temperatures and Freeze-thaw Cycles on Mechanical Properties of Ultra-high Performance Concret - *Ercong Kang, Jian Xie, Jiabao Yan, Jing Tang*	Stochastic Optimization of Multiple Tuned Inerter Dampers for Mitigating Seismic Responses of Bridges Isolated with Friction Pendulum Systems - *Yongkui Wen, Bo Hui*	Design Method on Flexural Behaviour of Singly-Reinforced PVA-ECC Beams - *Dan-Dan Wang, Shao-Bo Kang, Xiao-Fan Yu, Kun Liu, Xun-Tian Tan*	Nonlinear coupled thermal-structural analysis of monolithic and precast concrete corbel beam-to-column connection - *Noor Azim Mohd. Radzi, Shanmugam Muniandy, Fadlin Sakina Ismasafie, Roszilah Hamid*	An Efficient System Identification Method Using Power Spectral Density Data with Applications in Reliability Analysis - *Jia-Hua Yang*
1745-1800	Compressive Behavior of High Strength Steel Wire-Mesh Reinforced Concrete Filled Steel Tubular Columns - *Fangyuan Gao, Mingxiang Xiong, Fengming Ren*	Damping effects of cable dampers on girder vibrations in cable-stayed bridges - *P. Sae-ma, L. Sun, L. Chen, Z. Liu*	Numerical Analysis of Precast RC Composite Wall under Concentric Axial Loading for Concrete PPVC Building - *S.S. Yee,K.H. Kong,R.J.Y Liew*	Mechanical Performance of Novel UHPFRC Grouted SHS Tube-Sleeve Connection: Experiments, Numerical Simulation and Analytical Approaches - *Zhenyu HUANG, Weixiong DENG*	Data-Driven Modeling of Multiaxial Fatigue in Frequency Domain - *Xiaokun Zhou, Xiangwei Li, Xianjun Pei, Pingsha Dong*
1800-1815	Axial compression behaviours of concrete-filled square GFRP tube stub columns at arctic low temperatures - *Wang Zhe*	Optimal Design of Energy-dissipated Substructure with Viscous Damper for High-rise Building - *Daohang Hu, Xin Zhao*	Patterns in the Social Perspectives of Concrete Industry Stakeholders and Their Impact on the Sustainability Evaluation of Concrete - *Ludmila Soares Carneiro, Michael Henry*	Effects of gap arrangement on the compression behavior of square tubed steel reinforced-concrete columns - *Biao Yan, Quanlin Zhou, Dan Gan*	Damage Statistics and Integrity Assessment of Brick Masonry Structures in Historic Buildings - *Haiyang Qin, Yongjing Tang, Jiao He, Zhiwang Gu*
1815-1830		Design and optimization of viscous damping outrigger vibration reduction for ultra-high structures - *Jie Yao, Xin Zhao*	A Study on Estimation Method of Curing Influence Area for Prediction of Remaining Life on Real Concrete Structures - *Takeshi Iyoda, Aki Sugiyama, Masashi Miyawaki*	A Modified Beam-to-Column Connection for Steel Modular Structures with Enhanced Repairability - *Jiajia Xu, Xudong Qian, Chengguang Xu, Ran Tao*	Multi-view Target-free Video Structural Motion Estimation: a Self-adaptive Co-calibration Model - *Yi Zhang, Enjian Cai*
1830-1845				Numerical analysis of precast shear wall with opening and unspliced vertical distribution bars - *Qi Cai, Xiaobin Song, Xuwen Xiao*	

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1100-1145	**"Coupling models for fluid-seabed interactions around marine structures" - Prof. Dong-Sheng JENG, Griffith University**				
1145-1230	**"Effective use of high strength S690 steel in construction and effects on their mechanical properties after welding" - Prof. Kwok-Fai CHUNG, The Hong Kong Polytechnic University**				
	Session Co-chairs: Xudong QIAN and Guoqing GENG				
1230-1330	Lunch				
1330-1530	**Parallel session D: Progressive Collapse and Ultimate Structural Resistance**	**Symposium 10B: Bayesian System Identification of Civil Engineering Structures: Development and Application**	**Symposium 17: Intelligent Shield Tunnelling**	**Parallel session F: Engineering Design and Dynamics Structural Response**	**Symposium 12B: Mechanics of Materials and Structures with Generalized Continua: Flexible Structures, Composite Materials, Optimizations, and Applications**
	Chairs: Kang Hai TAN and Gang SHI	**Chairs: Hua-Yi PENG and Paul Heung Fai LAM**	**Chairs: Elton, Jian CHEN and Darren Siau Chen CHIAN**	**Chairs: Sze Dai PANG and Gary Jiarui LEI**	**Chairs: Pruettha NANAKORN and Duy VO**
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1330-1345	Enhancing anti-collapse capacity of steel frame with welded connection based on energy dissipation cover-plates - *Bao Meng , Du Qiangqiang, Weihui Zhong*	A robust Bayesian sensor placement scheme with enhanced sparsity and useful information for structural health monitoring - *Mujib Olamide Adeagbo, Heung-Fai Lam*	A Preliminary Review of Digital and Intelligent Cutterhead Management and the Enabling Technologies in Shield Tunnelling - *Ziwei Yin, Gang Li, Hanbin Luo, Zhengjun You*	Plate Thickness Distribution Estimation of a Belt Conveyor Support Structure Member Based on Cross-Sectional Vibration Modes Using Machine Learning - *Daichi Ogawa, Yaohua Yang, Tomonori Nagayama, Sou Kato, Kazumasa Hisazumi, Tomonori TominagaDaichi Ogawa, Yaohua Yang, Tomonori Nagayama, Sou Kato, Kazumasa Hisazumi, Tomonori Tominaga*	Free Vibration Analysis of Toroidal Shell Segments with Novel Four-Unknown Refined Theory - *Van-Loi Nguyen, Suchart Limkatanyu, Jaroon Rungamornrat*
1345-1400	Numerical Study of Prestressed Concrete Girder-Deck System with Variable Reinforcement and Span-depth Ratios - *Haoran Ni, R.S. Aboutaha*	Investigation of the performance of a bioinspired two-fold blades wind turbine with airfoil blade sections by using Qblade - *Yung Jeh Chu, Heung-Fai LAM, Hua-Yi PENG*	Data-driven safety assessment for shield tunnel excavation: Interoperability between parametric modeling and numerical simulation - *Ping Xie, Gang Li, Hanbin Luo, Xiao Yang*	Design for local buckling behaviour of welded high strength steel I-sections under bending - *S.X.Chen,H.Fang,J.Z.Liu, T.M.Chan*	Linear analysis of planar curved bi-directional functionally graded microbeams using the modified couple stress theory - *Duy Vo, Pana Suttakul, Jaroon Rungamornrat, Pruettha Nanakorn*

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1400-1415	Effects of modeling methods of RC diaphragm on the behavior of steel staggered truss framing structures - *Zexiang Li, Dan Gan, Xuhong Zhou*	Bayesian structural model updating of a large-span cable-stayed bridge through MCMC-based approach and vibration data - *C. Fang, H.J. Liu, H.F. Lam, M.O. Adeagbo, H.Y. Peng*	A Dynamic Model of Machine Learning and Deep Learning in Shield Tunneling Parameters Prediction - *Ruohan Wang, Guan Chen, Yong Liu*	Simulation and simplified method study on seismic collapse of core-outrigger structures - *Yue Liu, Jie Huang, Feifei Sun, Guanyuan Chen*	Data-driven Multi-scale Simulations of Nonlinear Elastic Heterogeneous Materials - *Zhongbo Yuan, POH Leong Hien*
1415-1430	FINITE ELEMENT ANALYSIS OF BONDED POST-TENSIONED SLAB-COLUMN CONNECTION WITH SHEAR STUD UNDER LATERAL LOAD - *K. Kingkokgruad, U. Prawatwong*	Efficient Bayesian model updating of a high-rise building based on MCMC and ambient data - F*eng-Liang Zhang, Jiao-Yuan Wei, Yan-Chun Ni, Jia-Hua Yang, Heung-Fai Lam, Hua-Yi Peng*	Research Progress and Technical Trend of Self-driving Shield - *MinHu, BingJian Wu, Jing Lu*	Bursting effects in prestressed concrete sleepers at different prestressed levels - *Dan Li, Sakdirat Kaewunruen*	Experimental and Numerical Studies on the Behaviour of Interior Slab-Column Joints Subjected to Eccentric Loading - *Mengzhu Diao, Hong Guan, Huizhong Xue, Yi Li, Xinzheng Lu*
1430-1445	Numerical investigation on collapse-resistant performance of unbonded prestressed RC beam-column sub-assemblages - *Licheng Wang, Wenliu Xu, Hongjie Yin*	Analysis of Vibration Performance of a Large-scale Bridge Based on Bayesian Identification Method - *Y.C. Ni, Q.W.Zhang*	Hybrid model for predicting average cutter wear in TBM excavation - *A. Li, G. LI, C. Wang, W.-L. Liu*	Ballastless track support deterioration evaluation using machine learning - *Jessada Sresakoolchai, Ting Li, Sakdirat Kaewunruen*	Steel Braces Optimization Design of Steel Tall Building Based on Sensitivity Analysis of Wind Vibration Stiffness Performance - *Yuzhou Hou, Xin Zhao*
1445-1500		Void detection of CA mortar layer of the slab track structure utilizing MCMC-based method - *Qin Hu, F. Fang*	Optimal control of operation parameters during EPB shield tunnelling based on artificial neural network model - *Xuejian Chen, Qing Kang, Yong Liu*	Studies on the relationship between anchor force of prestressed anchor cable and nonlinear vibration of anchor head - *Hao Li, Hui Cao*	Sensitivity Data Driven Composite Floor Structural Optimization for Tall Office Buildings - *Morn Chornay, Xin Zhao*

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1500-1515		A Bayesian Adaptive Resize-Residual Deep Learning Network for Fault Diagnosis of Rotating Machinery - *L. Zou, K.J. Zhuang, J. Hu*	Intelligent Decision Framework of Shield Attitude Correction Based on Deep Reinforcement Learning - *J. Xu, J.F. Bu, L.G. Zhang, J. Zhang, K.F. Li, S.M. Liu*	FEM Aspects of RC Buildings Modeling and Design - *Viktor Hristovski, Emil Jankulovski*	
1515-1530					
1530-1545	Break				
Time	**Keynote Session**				
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1545-1600	**Awardee Presentation: EASEC-17 Best Young Researcher's Paper Award**				
	Session Chair: Xudong QIAN				
1600-1615	**Closing Ceremony**				
	Master of Ceremony: Guoqing GENG				

General Information

Registration

Registration Fee

	Early bird(until 15th of May 2022)	Standard(From 16th of May 2022)
Normal	200 SGD	250 SGD
Students	100 SGD	150 SGD

Online registration and payment can be made via the following link: https://easec-17.org/registration.html

Payment can be made by VISA/MasterCard, Alipay or Paynow.

For offline registration and payment, kindly drop an email to ceesitbc@nus.edu.sg for further instructions.

Please take note that the above registration fee covers one paper submission/presentation. If the author intends to submit/present more than one paper, he/she will need to pay 20 SGD more for each added paper. There will no refund if the author wish to withdraw the registration.

Registration Fee covers the following:
- Admission to all sessions
- Final program book and access of the conference proceedings

About Zoom

The conference will be held through the zoom platform. You may download zoom and find more information about the platform at https://zoom.us/.

You can download the zoom client for free at the following website for PCs, tablets and smart phones: https://zoom.us/download#client_4meeting

Instructions to Authors and Session Chairs

INSTRUCTIONS TO AUTHORS

1) Please join the zoom session at least 10 minutes before the beginning of your scheduled session.

2) The session chair will introduce you to the audience before your video presentation is played.

3) During the video presentation, the audience may raise questions through the chat message in zoom, please feel free to interact with the audience through the chat message while your video presentation is being played.

4) Your presentation will be followed by a short Question and Answer (Q/A) Session. Please unmute yourself to interact with the audience during the Q&A session. The length of your Q/A session will be at the discretion of the session chairperson(s), depending on the number of speakers and the progress of the presentations in the session. Generally the Q/A session for each paper will not exceed 3 minutes. In cases when extra time is available, the chairperson(s) may invite further questions from the audience, who can address their questions to any speakers in the session.

5) Kindly refer to the Technical Program (available at the conference website and in the Program Booklet) for your presentation session and time.

6) If there is a possibility that you may be late for your allocated presentation slot for some reason, please contact our student helpers or the chairperson(s) so that your presentation may be re-scheduled to the later part of the session.

INSTRUCTIONS TO CHAIRS OF PARALLEL SESSIONS

1) Student helpers will be in the zoom session to assist you in playing the presentation videos during your session, and inform you of any last minute changes or matters.

2) Please note that the total allotted time for an oral presentation is 15 minutes, which include **a video presentation of around 12 minutes** and **a Q&A session of about 3 minutes.**

3) Each presentation will be followed by a short Question and Answer (Q/A) Session. The length of each Q/A session will be at the discretion of the session chairperson(s), depending on the number of speakers and the progress of the presentations in the session. Generally the Q/A session should not exceed 3 minutes. In cases when extra time is available, the chairperson(s) may invite further questions from the audience, who can address their questions to any speakers in the session.

4) Kindly refer to the Technical Program (available at the conference website and in the Program Booklet) for your presentation session and time.

INSTRUCTIONS TO KEYNOTE SPEAKERS

Please join the zoom session at least 10 minutes before the beginning of your keynote lecture. Student helpers will be available help you test PowerPoint presentation in zoom. Please take note that each plenary presentation is allocated **45 minutes (**including introduction by the session chair and Q&A)**.**

INSTRUCTIONS TO CHAIRPERSONS OF KEYNOTE LECTURES

The chairpersons of the keynote lectures should join the zoom session to e-meet with the keynote lecturer at least 10 minutes before the beginning of the session. The speaker's CV and the title of the presentation should have been e-mailed to you before the keynote lecture. A student helper will be there to assist you and inform you of any last minute changes or matters.

Please note that each keynote lecture presentation is allocated **45 minutes**, which includes a 2-minute introduction by the chairperson, a presentation around 35-40 minutes and a 3-8 minute Q&A session. If the presentation stretches over 40 minutes, you should remind the speaker to wrap up the presentation. Should extra time be available, the chairperson can initiate questions or invite questions from the audience for a short discussion.

Keynote Speakers

EFFECTIVE USE OF HIGH STRENGTH S690 STEEL IN CONSTRUCTION AND EFFECTS ON THEIR MECHANICAL PROPERTIES AFTER WELDING

Kwok-Fai CHUNG

Professor, Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University.

Founding Director, Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch)

The Hong Kong Polytechnic University

About the speaker: Prof. K. F. Chung is an internationally renowned academic, researcher and structural engineer with established expertise in steel construction. Prof. Chung obtained his bachelor degree from the University of Sheffield, and his doctoral degree from the Imperial College of Science and Technology in London. He worked at the Institute of Steel Construction in the U.K. for six years before his return to Hong Kong. Currently, Prof. Chung is a Professor at the Department of Civil and Environmental Engineering of the Hong Kong Polytechnic University. He is Founding Director of the Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch) at the Hong Kong Polytechnic University endorsed by the State Ministry of Science and Technology of the People's Republic of China. He was a Vice President of the Institution of Structural Engineers at the U.K. from 2017 to 2020, and he served as a Council Member of the Construction Industry Council at Hong Kong since 2018.

Prof. Chung works on a wide range of inter-disciplinary engineering investigations, analyses and simulations, especially on modern steel and steel-concrete composite structures. His research interests include limit state analyses and performance-based design of structural systems, high strength S690 and S960 steel, shear connections in composite structures, and structural fire engineering.

METAL ADDITIVE MANUFACTURING IN CONSTRUCTION: DEVELOPMENTS AND OPPORTUNITIES

Leroy Gardner
Professor of Structural Engineering at Imperial College London
Fellow of the Royal Academy of Engineering

About the Speaker: Prof. Leroy Gardner is Professor of Structural Engineering at Imperial College London and Fellow of the Royal Academy of Engineering. He is engaged in teaching at both undergraduate and postgraduate level, industry training, specialist advisory work and leading an active research group in structural engineering.

Prof. Gardner's principal research interests relate to the testing, simulation, analysis, design and construction of steel structures, on which he has co-authored 4 textbooks, 7 book chapters and over 400 technical papers. He is Editor-in-Chief of two international journals and serves on a number of code committees in Europe and the US. Prof. Gardner was awarded the IABSE prize in 2017 and was appointed Distinguished Visiting Professor at Tsinghua University in 2018.

VOLUME CHANGES AND WATER DISTRIBUTION IN INTERNALLY-CURED HIGH-PERFORMANCE AND ULTRA-HIGH-PERFORMANCE CONCRETE

Pietro Lura
Professor & Head of the Concrete and Construction Chemistry Laboratory,
ETH Zurich, Institute of Building Materials

About the Speaker: Prof. Pietro Lura is Head of the Concrete and Construction Chemistry Laboratory since 2008 and professor at ETH Zurich, Institute of Building Materials, since 2011. He received his MS in 1998 from the University of Brescia, Italy, and his PhD in 2003 from the Delft University of Technology, The Netherlands. He has been assistant professor at the Technical University of Denmark (2003-6), visiting researcher at the National Institute for Standard and Technology (2002) and at Purdue University (2005), and patent examiner at the European Patent Office in Munich, Germany (2006-8).

His research interests include hydration and early-age properties of concrete, in particular microstructure development, shrinkage, setting, early-age cracking and internal curing. In these fields he has done important contributions to both understanding of the fundamental mechanisms and to advancement in the state of the art. His work on measuring techniques of autogenous deformation earned him two awards from the Transportation Research Board, the Bryant Mather Award in 2006 and the Fred Burggraf Award in 2007. For his work on internal curing he received the American Concrete Institute Wason Medal for Materials Research in 2007. He received for the second time the ACI Wason Medal in 2009 for his contribution to the understanding of the mechanisms of plastic shrinkage cracking. In 2009 he also received RILEM L'Hermite Medal in recognition of his outstanding contribution to the study of the early-age behavior and volume instability of cement-based materials.

Additional research interests are fire resistance of concrete, degradation mechanisms, transport properties, cement-bitumen emulsion composites and 3D imaging (mainly with X-rays and neutrons).

CARBON SAVING IN CIRCULAR BUILDING MATERIALS

Caijun Shi
Chair Professor of College of civil Engineering, Hunan University
Founding Editor-in-Chief of the Journal of Sustainable Cement-based Materials

About the Speaker: Prof. Caijun Shi, a foreign member of the Engineering Academy of Ukraine, is currently a Chair Professor of College of civil Engineering, Hunan University. He is the founding Editor-in-Chief of the Journal of Sustainable Cement-based Materials. Prof. Shi is past vice president of Asian Concrete Federation (2017-2020) and a member of many technical committees within ACI, RILEM and ACF, Vice President of Cement Division and Executive Director of Solid Waste Division of Chinese Ceramic Society, Vice President of Building Materials Division of Chinese Architect Society, and Chair for UHPC Technical Committee of Chinese Civil Engineering Society. His research interests include characterization and utilization of industrial by-products and waste materials, design and testing of cement and concrete materials, development and evaluation of cement additives and concrete admixtures, and solid and hazardous waste management. In recognizing his contributions to research in waste management and concrete technology, he was elected as a fellow of International Energy Foundation in 2001, a fellow of American Concrete Institute in 2007, and a fellow of RILEM in 2016.

RESEARCH ADVANCES ON GEOPOLYMER-BASED ULTRA-HIGH PERFORMANCE CONCRETE AGAINST BLASTS

Chengqing Wu
Professor, School of Civil and Environmental Engineering,
University of Technology Sydney, Australia

About the speaker: Prof. Chengqing Wu, is currently working in School of Civil and Environmental Engineering, the University of Technology Sydney, Australia. He is internationally-respected for his research in the development of cement/non-cement based ultra-high performance concrete (UHPC) against blast and impact loads. Since he obtained his Ph.D from School of Civil and Environmental Engineering, Nanyang Technical University, Singapore in 2002, Professor Wu has completed a number of research projects related to blast and impact loading effects on above and underground structures, mitigation of blast effects on structures and the development of ultra-high performance concrete against blast and impact loads. Professor Wu is an associate editor of ASCE Journal of Performance of Constructed Facilities and the Chair of the Australian Chapter of the International Association of Protective Structures from 2013 to 2017. He successfully organized several international conferences such as the 4th International Conference of Protective Structures (ICPS 2016) and the 8th and 13th International Conferences on Shock & Impact Loads on Structures, (SILOS 2009 and SILOS 2019). He guest-edited several special issues of Journal of Performance for Constructed Facilities, ASCE and International Journal of Protective Structures. Professor Wu has also published a book "Development of Ultra-High Performance Concrete against Blasts" (2018) and over 200 referred international journal papers.

GRAPHENE ORIGAMI ENABLED METAMATERIAL STRUCTURES

Jie Yang
Professor, School of Engineering, RMIT University, Australia

About the speaker: Prof. Jie Yang is Professor in Engineering in the School of Engineering, RMIT University, Australia. He was a Postdoctoral Research Fellow at Department of Civil Engineering, the University of Queensland from 2002-2004, a Lecturer at the Department of Building and Construction, City University of Hong Kong from 2004-2007 before joining RMIT in 2008 as a Lecturer where he was promoted to full Professor in 2016. His main research interests include advanced composite structures, nanocomposites reinforced with carbon nanotubes or graphene, metamaterial structures, structural stability and dynamics, smart structures and control, and nano/micro-mechanics. Prof Yang is an author of over 400 papers including 252 international journal papers. His publications have attracted over 16800 citations with h-index 75 (Google Scholar). He is a Highly Cited Researcher in 2019, 2020, 2021 by Clarivate Analytics and is named by Australian Research Magazine as Global Field Leader in Mechanical Engineering in 2020, Australia's Research Field Leader in Mechanical Engineering in 2019, 2020, 2021, and Australia's Research Field Leader in Structural Engineering in 2021. Prof Yang also serves as the Editor-in-Chief of Engineering Structures (JCR Q1), the Associate Editor and Editorial Board Member for many other international journals.

DIGITAL-BASED TECHNOLOGY FOR SMART CONSTRUCTIONS

Sung-min CHO
Head, Government R&D project for smart constructions, South Korea

About the speaker: Dr. Sung-min CHO received his BS, MSc and Ph.D. degrees in civil engineering from Seoul National University, South Korea. He has been working for over 25 years in the fields of engineering technology and infrastructure policy mainly related to roads and transport. He has participated in numerous road construction projects including the longest bridge project in Korea and a number of global projects. He currently serves as the head of the government R&D project for smart constructions, the largest research program in the construction sector in Korea. He is the director general of Center for Smart Construction Technology, and Korea Expressway Corporation (Authority for National Express System of Korea).

RESILIENT AND ABUNDANT URBAN BAY; CLIMATE CHANGE THROUGH ADAPTATION; MITIGATION MEASURES; ECOSYSTEM SERVICES

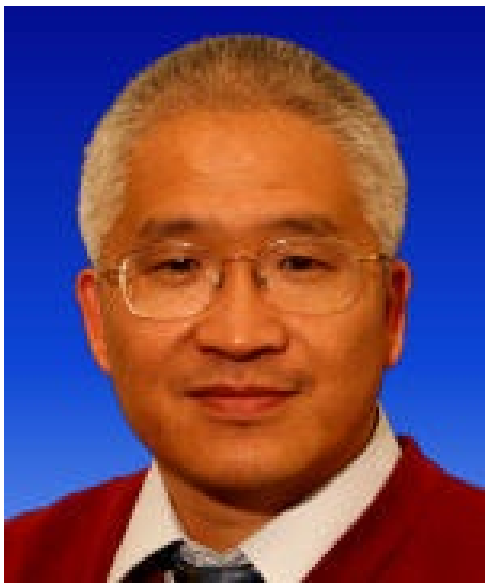
Jun Sasaki
Professor, Socio-Cultural Environmental Studies, Graduate School of Frontier Sciences, the University of Tokyo

About the speaker: Prof. Jun Sasaki is a professor of Socio-Cultural Environmental Studies, Graduate School of Frontier Sciences, the University of Tokyo. He got a Doctoral degree 1996 in Civil Engineering from the University of Tokyo and started his academic career as a research associate at the same university in 1997. After serving at Yokohama National University for nearly 11 years, he has joined the present department since 2013. His main research areas are estuarine environments and the sustainability of coastal areas in developing countries. In the former one, he has been involved in predicting and evaluating estuarine environmental processes by integrating pelagic and benthic physical and biogeochemical processes, which are to be utilized for planning better environmental restoration and management. Currently, he is leading a collaborative project on the evaluation of blue carbon in urban bays.

He is currently serving as the chair of the coastal engineering committee, Japan Society of Civil Engineers. He also has experience in supporting policymaking in government committees, such as the social implementation of blue carbon at the Ministry of Land, Infrastructure, Transport and Tourism as the chair, the future of environmental policy in enclosed coastal waters at the Ministry of the Environment, coral reef restoration in Fisheries Agency, and Natural Restoration Expert Committee organized by these three ministries. He has also been involved in a social implementation of habitat restoration in Tokyo Bay by leading the Project Team for Creation of Habitat under the Public-Private Cooperation Forum for Tokyo-Bay Restoration.

COUPLING MODELS FOR FLUID-SEABED INTERACTIONS AROUND MARINE STRUCTURES

Dong-Sheng JENG
Professor, School of Engineering and Built Environment, Griffith University Gold Coast Campus, Australia



About the speaker: Prof. D.-S. Jeng is Professor in the School of Engineering and Built Environment, Griffith University Gold Coast Campus, Australia. Prof Jeng obtained his PhD from The University Western Australia (UWA), Australia in 1997. He was a Postdoctoral Research Fellow at ARC Special research Centre for Offshore Foundation System, UWA during 1997-1999, a Lecturer/Senior Lecturer at School of Engineering, Griffith University during 1997-2004, a Senior Lecturer/Associate Professor at School of Civil Engineering, The University of System during 2004-2007, NRP Chair in Civil Engineering, Department of Civil Engineering, University of Dundee, UK during 2007-2013, before re-joining Griffith University in 2013 as a Professor.

His principal research interests include coastal geotechnical engineering, porous flow, groundwater hydrodynamic in coastal aquifers, offshore wind energy, and application of artificial neural network modelling in civil engineering. He has published 3 books, 10 book chapters and over 350 journal articles. He is editor-in-Chief of Soil Dynamics and Earthquake Engineering, Editor of Engineering Application of Artificial Intelligence, Associate Editor of Applied Ocean Research, ASCE Journal of Waterways, Port, Coastal & Ocean Engineering, Advances in Water Resources, and Editorial Board member for another four international journals.

MULTI-SCALE DIGITAL TWIN DRIVEN RESEARCH EFFORTS TOWARD RESILIENT AND SUSTAINABLE SMART CITIES

Shang-Hsien (Patrick) Hsieh
Professor, Department of Civil Engineering at National Taiwan University (NTU), Taipei, Taiwan

About the speaker: Dr. Hsieh is a Professor in the Computer-Aided Engineering Division of Department of Civil Engineering at National Taiwan University (NTU), Taipei, Taiwan. He is currently serving as Chairman of Department of Civil Engineering in NTU and Director of the Research Center for Building & Infrastructure Information Modeling and Management in the Department. He is a member of Board of Directors (BOD) of the International Society for Computing in Civil and Building Engineering since 1999 and served as the society's President from 2006 to 2008. He is also the BOD members of the Asian Group for Civil Engineering Informatics (since 2013) and the International Consortium of Construction Engineering and Project Management (since 2021). Due to his contributions to academic research, international cooperation, and construction industry's digital transformation practice, Dr. Hsieh was elected as an Associate Member of the Russian International Academy of Engineering in 2021. He has a wide range of research interests, including intelligent engineering & construction modeling and simulation, engineering information & knowledge management systems, and innovative engineering education.