



EASEC16: BRISBANE

Conference Programme



16th East Asia-Pacific Conference on Structural Engineering & Construction

BRISBANE CONVENTION & EXHIBITION CENTRE, 3 - 6 DEC 2019
<https://easec16.com.au/>

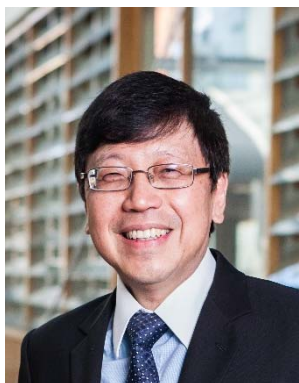
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WELCOME MESSAGE

from EASEC16 Chairperson

On behalf of the EASEC16 local organising committee, I warmly welcome all of you to this 16th East Asia Pacific Conference on Structural Engineering and Construction. We look forward to the many conversations that each plenary speaker, each special session organiser and conference delegate will ignite at the beautiful Brisbane Convention and Exhibition Centre from 3-6 December 2019.

EASEC was founded by Professor Fumio Nishino, and the first conference was held in Bangkok during January 15-17, 1986. EASEC has now become one of the longest running conferences of its kind, taking place every 2 years in one of the countries in the East Asia Pacific region. Countries that have hosted EASEC are Thailand, China, Korea, Australia, Taiwan, Japan, Singapore, Hong Kong, Indonesia and Vietnam.

This year, EASEC in Brisbane is celebrating its 33rd anniversary. Despite this luminous heritage, it persists as a premier forum not only for participants from East Asia Pacific countries but also for the global community to review, discuss and present the latest developments and innovations in the broad discipline of structural engineering and construction. The conference also presents an ideal platform for participants to renew friendships and establish new collaborations. EASEC16 has attracted over 300 participants from 18 countries and 5 continents. The conference proceedings contains over 280 papers (including 8 keynote papers) that cover almost all the topics in structural engineering and construction. I hope that the papers and the presentation materials in this conference will trigger new ideas in your professional work and research.

We wish to express our sincere gratitude to all the presenting authors, participants and helpers as well as the sponsors whose contributions have made this conference possible. I wish you a pleasant stay and a fruitful time in Brisbane.



C.M. Wang
FTSE, FSEng, FIStructE, FIES, FSFSS
TMR Chair Professor in Structural Engineering
School of Civil Engineering
The University of Queensland

December 2019
Brisbane, Australia

ACKNOWLEDGEMENTS

The EASEC16 Conference Organizing Committee acknowledges with much gratitude the generous sponsorships received from the following organizations and companies:



ARC Industrial Transformation
Research Hub for Nanoscience Based
Construction Material Manufacturing

Also, the committee is grateful to Mr Arosha Dabarera and Mr Liang Li for designing the conference programme booklet.



Message from the Minister for Tourism Industry Development

The Hon Kate Jones MP

Welcome to Brisbane for the East Asia Pacific Conference on Structural Engineering and Construction (EASEC).

Especially as the conference hasn't been in Australia for two decades.

Brisbane's facilities, climate and location make it a spectacular location to host major events and business conferences.

During your stay, I hope you find the opportunity to explore the diverse and rich tourism offerings of this beautiful city and our surrounding regions.

The Hon Kate Jones MP
Minister for Tourism Industry Development

EASEC INTERNATIONAL STEERING COMMITTEE

<i>Chair Emeritus:</i>	Prof Y. Fujino	Japan
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	Prof L.P. Yeh	P. R. China
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	Dr G. Chiu	USA
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Prof	Ting-Hua	YI	Dalian University of Technology
Prof	Kenneth T.W.	YIU	Massey University
Dr	Jun	YU	Hohai University, China
Prof	Chung-Bang	YUN	Zhejiang University
Prof	Feng-Liang	ZHANG	Harbin University of Technology (Shenzhen)
Prof	Jian	ZHANG	Southeast University
A/Prof	Lihai	ZHANG	The University of Melbourne
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Prof	Shishun	ZHANG	Huazhong Uni. of Science and Technology
Dr	Jianjun	ZHANG	Swinburne University of Technology
Dr	Xihong	ZHANG	Curtin University
Prof	Yu	ZHENG	Dongguan University of Technology
Prof	Hong-Ping	ZHU	Huazhong Uni. of Science and Technology
A/Prof	Xinqun	ZHU	University of Technology Sydney

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Mr Der-Shen Yang
Mr Shaoyu Zhao

Contact Persons: Mr Arosha Dabarera (Email: a.dabarera@uq.net.au | Mobile: +61 402 532 682)
Mr Liang Li (Email: liang.li@uq.net.au | Mobile: +61 452 566 516)
Dr Vinh Dao (Email: v.dao@uq.net.au | Mobile: +61 422 293 998)
Professor CM Wang (Email: cm.wang@uq.net.au | Mobile: +61 434 364 775)

PLENARY SPEAKERS



Professor J.N. Reddy

Oscar S. Wyatt Jr. Chair Professor
University Distinguished Professor
Texas A & M University, USA

Keynote lecture: Personal Reflections of My Research in Structural Mechanics: Past, Present and Future



Professor José L. Torero

Professor of Civil Engineering and Head of Department
Department of Civil, Environmental and Geomatic Engineering
University College London, UK

Keynote lecture: Fire or High Temperature Structural Behaviour, Are They Same?



Professor Yozo Fujino

Institute of Advanced Sciences
Yokohama National University, Japan

Keynote lecture: Monitoring of Infrastructure for Risk Management



Professor Robert E. Melchers

Centre for Infrastructure Performance and Reliability
The University of Newcastle, Australia

Keynote lecture: Changing Our Understanding of Reinforcement Corrosion in Marine Concrete Structures



Professor David A. Nethercot

OBE, FEng, FTSE, NAE Emeritus Professor of Civil Engineering
Imperial College London, UK

Keynote lecture: Why Academics Should Take an Interest in Structural Codes



Professor Ser Tong Quek

Department of Civil and Environmental Engineering
National University of Singapore, Singapore

Keynote lecture: Petal Auxetics with Targeted Poisson's Ratios using Isogeometric Shape Optimization



Professor James Ding Jiemin

Tongji Architectural Design (Group) Co., Ltd, China

Keynote lecture: Innovation and Practice in Building Structural Design



Professor Mark Bradford

Director of Research & Founding Director
Centre for Infrastructure Engineering & Safety
School of Civil & Environmental Engineering
UNSW Sydney, Australia

Keynote lecture: Experimental and Numerical Study of Flexural-Torsional Buckling of Web-Tapered High-Strength Steel I-Beams

MEMORY

Nishino Medal and Prize 2019

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 10 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 two medals in the honor of Professor 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 future 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. The awardees so far are Prof. Worsak Kanok-Nukulchai, Thailand (2008), Prof. Sung-Pil Chang, Korea (2011), Prof. Yozo Fujino, Japan (2013), Prof. Yeong-Bin Yang, Chinese Taipei (2016), and Prof. Sritawat Kitipornchai, Australia (2017).

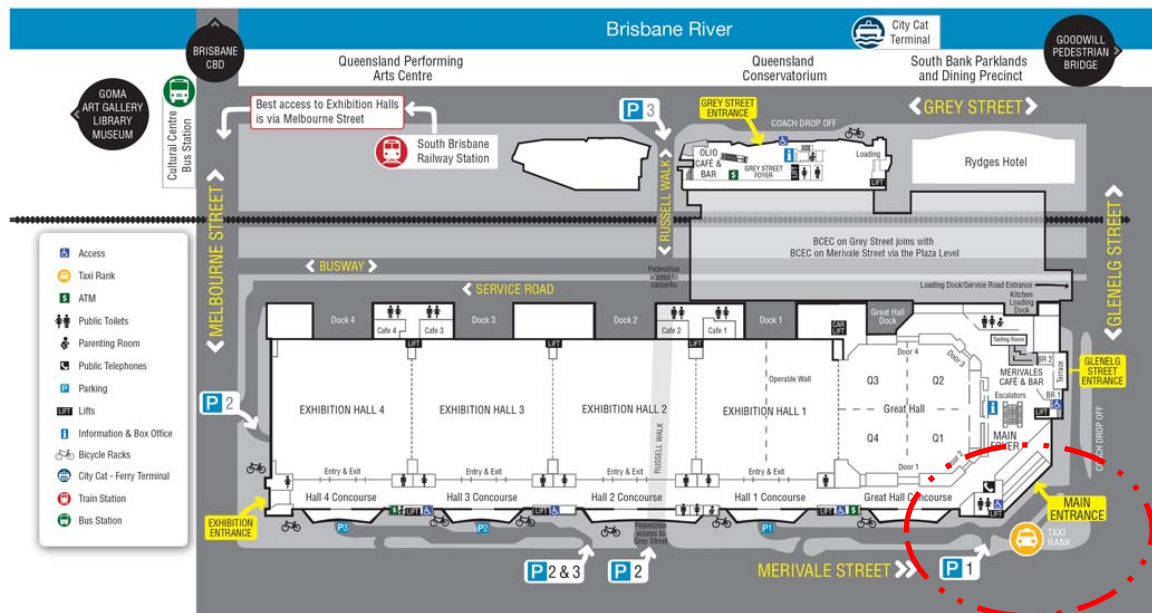
The Nishino Prize: to be awarded concurrently at each future EASEC conference to a young engineer (age below 45 years) from the Asia-Pacific region, who has made significant contributions and shown potential for great future achievements in the area of structural engineering and construction through research, development and/or practice. The winners are Prof. Xuhui An, China and Mr. Chi-Heng Chiang, Chinese Taipei (2008), Dr. Siu-Kui Au, Hong Kong SAR and Dr. Kohei Nagai, Japan (2011), Prof. Yong-Xia, Hong Kong SAR, and Mr. Kenichi Kata, Japan (2013), Dr. Ching Tai NG, Australia (2016), Dr. Hongwei Huang, China (2017), and Dr. Songye Zhu, Hong Kong (2017).

These award and prizes will be presented in the opening ceremony of EASEC16.

LOCATION OF CONFERENCE VENUE

Brisbane Convention and Exhibition Centre
Merivale Street and Glenelg Street, South Brisbane, QLD 4101
<https://www.bcec.com.au/visit/>

Location and Access Map



Getting here

Transport

- **Plan your journey** – www.translink.com.au.
- **Walking distance** – Approximately 3-5 minutes from public transport stops.
- **Train:** Closest stop is South Brisbane station.
- **Bus:** Closest stop is Cultural Centre station.
- **Ferry:** Closest stop is South Bank Ferry Terminal.

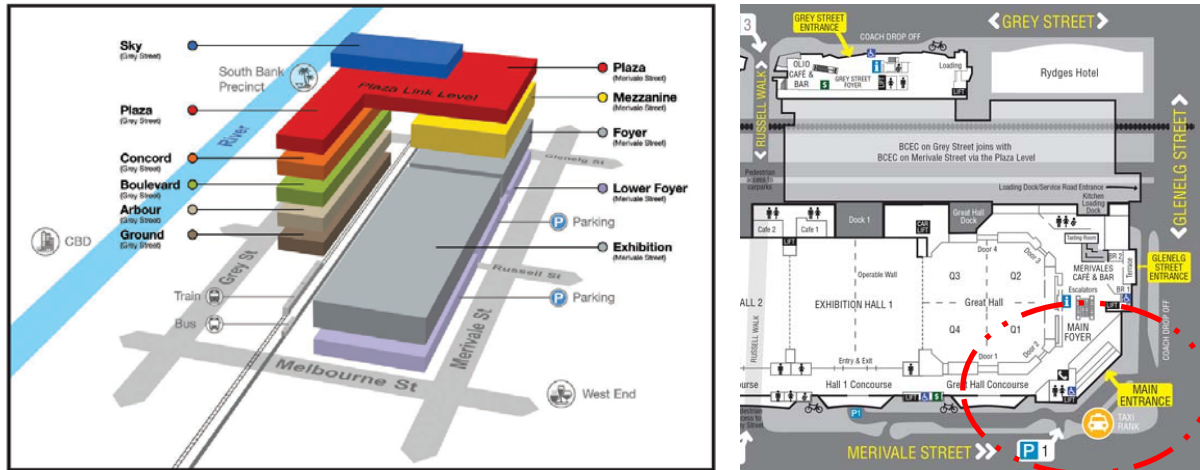
Taxi/Limousine

- Taxi rank is at the main entrance at the corner of Merivale & Glenelg Streets.
- Taxi phones allowing free calls to Yellow Cabs or Black & White Cabs are available for use at BCEC Information Desks in the Main Foyers of Merivale Street and Grey Street.

Private Vehicle

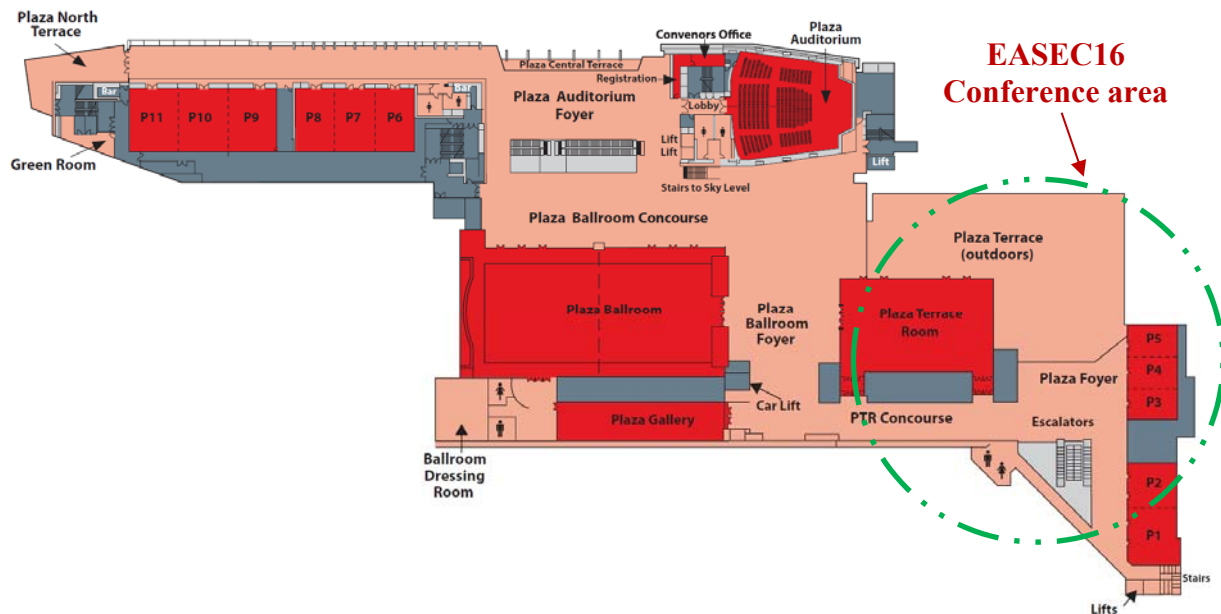
- Entries to BCEC parking areas (with 24-hour undercover parking) are as on the above map. Accessible parking spaces are available in P1 and P2 located adjacent to lift lobbies. **P1 is most convenient for EASEC16**, while P2 and P3 are also great for both EASEC16 and Rydges South Bank.

Location of Plaza level



Note: The Plaza Level (in red) is the link between BCEC on Merivale Street and BCEC Grey Street. The Plaza Terrace also provides direct access to Rydges Hotel, where the *EASEC16 Banquet* is held on 5th December 2019.

Plan of Plaza Level



Note: EASEC16 activities (except the Banquet) are around the Plaza Foyer. One way to get to the Plaza Foyer is to enter BCEC at the Main Entrance (at the corner of Merivale & Glenelg Streets), and then go up the escalator from the Main Foyer to Mezzanine Level through to Plaza Level.

Welcome Reception

Date: 4th December 2019 (Wednesday)
Time: 18:00 – 20:00
Venue: Plaza Foyer, Brisbane Convention and Exhibition Centre

Conference Banquet

Date: 5th December 2019 (Thursday)
Time: 19:00 – 22:30 (Pre-dinner drink starts outside of Ballroom at 18:30)
Venue: Podium Ballroom, Level P, Rydges South Bank Brisbane, 9 Glenelg St, South Brisbane QLD 4101
Tel: +61 7 33640800
Website: <https://www.rydges.com/accommodation/brisbane-qld/brisbane-south-bank/>
Note: **Please bring the conference banquet ticket to gain entry.**

Details:

- Rydges South Bank Hotel.
- At the corner of Grey & Glenelg Streets, South Brisbane QLD 4101.
- Enter Via Hotel Lobby. The event is hosted in the Podium Ballroom on Level P.
- Once exit the lifts, the Podium 1 Doors are located to the left of the lifts.
- Beverages will be available on arrival. Alternatively, if guests arrive early to the function, the Soleil Pool Bar is also located on Level P directly opposite the lifts.



Direction:

- Entrance to the Podium Ballroom of Rydges South Bank Brisbane via either:
 - (1) From Plaza Foyer, walking across Plaza Terrace towards Rydges South Bank Brisbane and following the signs there;
 - (2) Staircase located at Grey Street;
 - (3) Lift at the lobby of Rydges South Bank Brisbane.

GENERAL INFORMATION

About Brisbane

Being the state capital of Queensland with a population of just over 2.3 million, Brisbane is the third largest city in Australia, behind Sydney and Melbourne. The city enjoys an enviable subtropical climate with over 300 days of sunshine per year.

During the summer months, when the conference takes place, days are typically hot and humid with frequent afternoon storms. The nights are balmy and pleasant, making it perfect for sitting outdoors and enjoying the atmosphere along the river. Life in Brisbane is laid back with a focus on outdoor activities.

Getting here

You can fly directly from overseas or local airports to Brisbane Airport – International and Domestic Terminals. Alternatively, you can get to Brisbane via:

- International Cruise Ship Terminal at Hamilton – which means you can also cruise to and from Brisbane!
- Rail connections interstate.
- M1 Pacific Motorway connecting Brisbane to the surrounding regions. Driving times:
 - Gold Coast – 1 hour south ; Sunshine Coast – 1½ hours north ; Toowoomba – 1.5 hours west ; Byron Bay – 2 hours south ; Sydney – 10 hours south.

REMEMBER: In Australia we drive on the left hand side of the road in right hand drive cars. It is always advisable to check the driving rules before hiring a car and driving.

Getting around

Brisbane has a good public transport network primarily comprising buses and ferries.

- Bus: The Brisbane Convention and Exhibition Centre is conveniently located at the heart of the Southbank Cultural Centre; which has its own major bus terminus, with easy connections into the city and the night-life hubs of West End and Fortitude Valley.
- Ferry: The City Cat ferry service is a great way to get a sense of Brisbane from the river. With stops dotted along the north and south banks throughout the city, it is an easy way to get around and see the city at the same time.

Currency

Brisbane uses Australian Currency Australian Dollars (AUD). Currency can be converted or Travellers Cheques cashed at banks and Bureau de Change. Retailers and restaurants clearly advertise with signage which credit cards they will accept. In Australia, the most accepted credit cards are Visa and Mastercard, with American Express and Diners Cards accepted in many but not all establishments.

Useful links

- <https://www.visitbrisbane.com.au/>: Brisbane.
- <https://www.visitbrisbane.com.au/south-bank/destinations>: South Bank Parklands.
- <https://translink.com.au/>: Plan your journey using public transport.

EASEC16 PROGRAMME OVERVIEW

Tuesday 3 rd December 2019	
15:00 – 19:00	Pre-conference registration @ Plaza Foyer

Wednesday 4 th December 2019					
07:30 – 17:30	Registration @ Plaza Foyer				
08:30 – 09:30	Opening Ceremony @ Plaza Terrace Room				
09:30 – 10:45	Plenary Session 1 @ Plaza Terrace Room				
10:45 – 11:15	Morning Coffee/Tea Break @ Plaza Foyer				
11:15 – 13:00	Terrace Room	Room P2	Room P3	Room P4	Room P5
	PS-01	PS-02	PS-03	PS-04	PS-05
13:00 – 14:00	Lunch @ Plaza Foyer				
14:00 – 15:30	Terrace Room	Room P2	Room P3	Room P4	Room P5
	PS-06	PS-07	PS-08	PS-09	PS-10
15:30 – 16:00	Afternoon Coffee/Tea Break @ Plaza Foyer				
16:00 – 17:45	Terrace Room	Room P2	Room P3	Room P4	Room P5
	PS-11	PS-12	PS-13	PS-14	PS-15
18:00 – 20:00	Welcome Reception @ Plaza Foyer				

Thursday 5 th December 2019					
08:00 – 17:30	Registration @ Plaza Foyer				
09:00 – 10:45	Plenary Session 2 @ Plaza Terrace Room				
10:45 – 11:15	Morning Coffee/Tea Break @ Plaza Foyer				
11:15 – 13:00	Terrace Room	Room P2	Room P3	Room P4	Room P5
	PS-16	PS-17	PS-18	PS-19	PS-20
13:00 – 14:00	Lunch @ Plaza Foyer				
14:00 – 15:30	Terrace Room	Room P2	Room P3	Room P4	Room P5
	PS-21	PS-22	PS-23	PS-24	PS-25
15:30 – 16:00	Afternoon Coffee/Tea Break @ Plaza Foyer				
16:00 – 17:45	Terrace Room	Room P2	Room P3	Room P4	Room P5
	PS-26	PS-27	PS-28	PS-29	PS-30
19:00 – 22:30	Conference Banquet @ Podium Ballroom, Level P, Rydges South Bank Brisbane				

Friday 6 th December 2019					
08:00 – 09:00	Registration @ Plaza Foyer				
09:00 – 10:45	Plenary Session 3 @ Plaza Terrace Room				
10:45 – 11:15	Morning Coffee/Tea Break @ Plaza Foyer				
11:15 – 13:00	Terrace Room	Room P2	Room P3	Room P4	Room P5
	PS-31	PS-32	PS-33	PS-34	PS-35
13:00 – 14:00	Lunch @ Plaza Foyer				
14:00 – 15:30	Terrace Room	Room P2	Room P3	Room P4	Room P5
	PS-36	PS-37	PS-38	PS-39	PS-40
15:30 – 16:00	Afternoon Coffee/Tea Break @ Plaza Foyer				
16:00 – 17:45	Terrace Room	Room P2	Room P3	Room P4	Room P5
	PS-41	PS-42	PS-43	PS-44	PS-45
17:45 – 18:00	Closing Ceremony @ Plaza Terrace Room				

PS = Parallel Session

CONFERENCE PROGRAMME

Wednesday 4th December 2019	
07:30 – 17:30	Registration @ Plaza Foyer
08:30 – 09:30	<p>Opening Ceremony @ Plaza Terrace Room</p> <p><i>Emcee: Professor Johnny Ho</i></p> <p>Welcome to the Country & Traditional Aboriginal Cultural Performance</p> <p>Opening Addresses</p> <p><i>Professor Yeong-Bin Yang (Chongqing University)</i> <i>Chairperson of EASEC International Steering Committee</i></p> <p><i>Professor Chien Ming Wang (The University of Queensland)</i> <i>EASEC16 Conference Chair</i></p> <p>Presentation of Nishino Medal and Nishino Prize <i>Professor Yozo Fujino (Yokohama National University) to preside</i></p> <p>Group Photo @ Plaza Terrace Room</p>
09:30 – 10:45	<p>Plenary Session 1 @ Plaza Terrace Room</p> <p>Chair: Professor Sritawat Kitipornchai (The University of Queensland)</p> <p>PERSONAL REFLECTIONS OF MY RESEARCH IN STRUCTURAL MECHANICS: PAST, PRESENT AND FUTURE <i>Professor J.N. Reddy (Texas A & M University)</i></p> <p>MONITORING OF INFRASTRUCTURE FOR RISK MANAGEMENT <i>Professor Yozo Fujino (Yokohama National University)</i></p>
10:45 – 11:15	Morning Coffee/Tea Break @ Plaza Foyer
11:15 – 13:00: Parallel Sessions 01 to 05	
11:15 – 13:00	<p>Parallel Session 01: SS06 - “Advances in Structural Engineering: Design, Assessment and Inspection” organised by A/Professor C.W. Huang (Chung Yuan Christian University) and Professor C.S. David Chen (National Taiwan University)</p> <p>@ Plaza Terrace Room</p> <p>Chair: Professor Yuan-Sen Yang (National Taipei University of Technology)</p> <p>(SS06-01) A Confinement Efficiency of Hooked Steel Fibers in High Strength Concrete <i>W.C. Liao, Y.J. Kuo and E.J. Liu</i></p> <p>(SS06-02) Viscoelastoplastic Analysis of a Bridge with Functional Bearing System <i>L.W. Liu and K.Y. Liu</i></p> <p>(SS06-03) Preliminary Study of Internal Impact on Metal Silo for Granular Solids under Seismic Loading <i>W.T. Chang and M. Bonopera</i></p> <p>(SS06-04) Flood-Resistant Capacity of Scoured Bridges <i>L.G. He, C.W. Huang, Y.B. Lin and K.C. Chang</i></p> <p>(SS06-05) Probability-Based Seismic Assessment for Bridges <i>K.W. Chou, L.G. He and C.W. Huang</i></p> <p>(SS06-06) Machine Learning for Bioinspired Structural Materials <i>C.S. Chen, S.L. Tsai, Y.C. Hsu, S.W. Chang and P.Y. Chen</i></p> <p>(SS06-07) Real-Time Scour Monitoring System Development for Bridge Foundation <i>Y.B. Lin, X.Q. Liu and K.C. Chang</i></p>

11:15 – 13:00	<p>Parallel Session 02: SS12 - “Current Management Issues in Construction” organised by Professor S.O. Cheung (City University of Hong Kong), A/Professor K.T.W. Yiu (Massey University) and A/Professor P. Wong (RMIT University)</p> <p>@ Room P2</p> <p>Chair: Professor Sai On Cheung (City University of Hong Kong) and A/Professor Kenneth T.W. Yiu (Massey University)</p> <p>(SS12-01) Motivators of Implementing Construction Incentivisation in Hong Kong <i>L. Zhu and S.O. Cheung</i></p> <p>(SS12-02) A Conceptual Framework on the Effects of Apology on Psychological Aggression in Construction Dispute Negotiation <i>L. Zhu, C.Y. Ho and S.O. Cheung</i></p> <p>(SS12-03) A Study of Construction Disputes in the New Zealand Context <i>T.W. Yiu, Z. Lu and K.P. Ang</i></p> <p>(SS12-04) Commitment to Construction Health and Safety – The Worker’s Perspective <i>T. W. Yiu, H. Hayalie and R. Zhong</i></p> <p>(SS12-05) What Affects Construction Innovation Adoption in Building and Infrastructure Projects – A Case Study in Australia <i>L. Qi, S. Holdsworth and P.S.P. Wong</i></p> <p>(SS12-06) Towards Applying Virtual Reality Techniques in Fostering Blended Learning of the Construction Technology <i>P.S.P. Wong, T. Perera, B. Abbanejad and A. Ahankoob</i></p> <p>(SS12-07) The Application of BIM in the Undergraduate Course ‘Integrated Building Project Development’ <i>C.C.W. Keung and W.H. Fok</i></p>
11:15 – 13:00	<p>Parallel Session 03: Concrete and Composite Structures (1)</p> <p>@ Room P3</p> <p>Chair: Professor Mark Bradford (UNSW Sydney)</p> <p>(P060) Long-Term Experiments on Composite Slabs Exposed to Different Surface Drying Conditions <i>G. Ranzi, G. Frigerio and O. Vallati</i></p> <p>(P071) Experimental Study on Compressive Response of Large Rupture Strain FRP Confined Reinforced Concrete <i>S. Saleem and A. Pimanmas</i></p> <p>(P088) The Effects of Shear Span Ratio on Shear Properties of RC Beams using Fiber Reinforced Porosity Free Concrete <i>H. Wakayama, K. Okubo, K. Kono, E. Yasuda and J. Niwa</i></p> <p>(P092) An Investigation into Application of CFRP for Precast Slabs at Joint Positions <i>H.T. Nguyen, H. Masuya, H. Watase and T. Tanaka</i></p> <p>(P097) Stable Limit Axial Load Ratios of Concrete Filled Steel Tubular Beam-Columns under Varying Axial Loads <i>L. Li</i></p> <p>(P108) Composite Action Between Steel Girder and Precast Concrete Considering Haunches/Mortar and Stud’s Geometrical Configurations <i>T. Matsumoto, F. Asano and T. Yamaguti</i></p> <p>(P147) The Influence of the Deterioration of Concrete-Rebar Bond due to Corrosion on the Structural Performance of RC Structures <i>Y. Ito, R. Kurihara and N. Chijiwa</i></p>

11:15 – 13:00	<p>Parallel Session 04: Young Researchers' Papers (1) @ Room P4 Chair: Professor David Nethercot (Imperial College London)</p> <p>(P020) Study on an Innovative H-Beam to SHS-Column Joint with Cast Column-Link in Steel Frames <i>D. Ye, Y. Chen, G. Zhao and Q. Shi</i></p> <p>(P025) Application of Knowledge Management and BIM Technology for Maintenance Management of Concrete Structures <i>Y.F. Zhang, H. Yokota, P.Y. Miao and Y.L. Zhu</i></p> <p>(P029) Effect of Fly Ash and Superabsorbent Polymer on Concrete Carbonation <i>P. Chindasiriphan and H. Yokota</i></p> <p>(P033) Structural Behavior of Steel Moment-Resisting Frames subjected to Multiple Earthquakes Considering Column Strength Deterioration <i>R. Tenderan, T. Ishida and S. Yamada</i></p> <p>(P035) Mechanical Properties of Mortar Reinforced with Recycled Nylon Fiber from Waste Fishing Nets <i>T. Srimahachota, H. Matsuura and H. Yokota</i></p> <p>(P038) Infrared Thermography for Detecting Subsurface Defects of Concrete Structures <i>B.N.K. Raja, S. Miramini, C. Duffield and L. Zhang</i></p> <p>(P050) Deterioration Behavior of SHS Steel Columns subjected to Small Amplitude Loading History <i>T. Ishida and S. Yamada</i></p>
11:15 – 13:00	<p>Parallel Session 05: SS05 - "Emerging Techniques for Structural Health Monitoring of In-Service Bridges" organised by Professor T.H. Yi (Dalian University of Technology) and Dr J. Li (Curtin University) @ Room P5 Chair: Professor Jun Chen (Tongji University) and A/Professor Dong-Hui Yang (Dalian University of Technology)</p> <p>(Invited Lecture) (SS05-17) Monitoring-Based Analysis of Three Dimensional Thermal Gradients for Bridge Girders <i>T.H. Yi, D.H. Yang and G.D. Zhou</i></p> <p>(SS05-01) Identification of Structural Time-Varying Physical Parameters under Unknown Excitations with Incomplete Measurements <i>N. Yang and Y. Lei</i></p> <p>(SS05-14) Field Data Analysis of Time-Variant Structural Displacement of Cable-Stayed Bridge under Thermal Effects <i>D.H. Yang, T.H. Yi and H.N. Li</i></p> <p>(SS05-15) Ultrasonic Imaging of Concrete Bridge Decks with Overlays <i>S. Lin and T.H. Yi</i></p> <p>(SS05-16) Application of FBG Sensor with Low Temperature Sensitivity in Transmission Tower Safety Monitoring <i>L. Ren, R.Z. You, H.N. Li and T.Z. Feng</i></p> <p>(SS05-18) Probabilistic Fatigue Assessment for Steel Bridges using Master S-N Curve Method <i>Y.H. Su and X.W. Ye</i></p> <p>(SS05-20) In-Operational Parameters Identification for Time-Varying Structures based on Multisensory S-Transform <i>J. Zhang and D. Yang</i></p>

13:00 – 14:00	Lunch @ Plaza Foyer
14:00 – 15:30: Parallel Sessions 06 to 10	
14:00 – 15:30	<p>Parallel Session 06: SS06 - “Advances in Structural Engineering: Design, Assessment and Inspection” organised by A/Professor C.W. Huang (Chung Yuan Christian University) and Professor C.S. Chen (National Taiwan University)</p> <p>@ Plaza Terrace Room Chair: Professor Chuin-Shan Chen (National Taiwan University)</p> <p>(SS06-08) The Application of Tension-Only Energy Dissipaters on the Post-Tensioned Rocking Columns <i>H.H. Hung, C.W. Huang, C.R. Jiang and J.J. Li</i></p> <p>(SS06-09) Energy Dissipation Analysis of Rockfall Protection Mesh Test based on UAVs Video Image Analysis <i>Y.S. Yang, L.H. Chen, K.C. Chang, Y.D. Wang and M. Tian</i></p> <p>(P266) Comparison of Numerical and Semi-Analytical Dynamic Results for Inclined Beam under Moving Load <i>D.S. Yang and C.M. Wang</i></p> <p>(P123) Design of an Experimental Set-Up to Capture the Dynamic Response of Mass Timber Post-And-Beam Systems under a Column Removal Scenario <i>X. Cheng, B.P. Gilbert, H. Guan, I.D. Underhill, H. Karampour and S. Gunalan</i></p> <p>(P222) Non-Linear Simulation and Design of Flexible Barriers against Rock-Falles using a Brake Element <i>S.L. Chan, Z.H. Zhou, Y.P. Liu, M.N.W. Lai and L. Zhao</i></p> <p>(P234) Instability of Metal Scaffold with and without Settlement <i>S.H. Lo and Jake L.Y. Chan</i></p>
14:00 – 15:30	<p>Parallel Session 07: Structural Engineering and Construction: Case Studies @ Room P2 Chair: Professor James Ding Jiemin (Tongji Architectural Design Institute) and Professor Jie Yang (RMIT University)</p> <p>(P164) Project Jewel Changi Airport – Design and Construction Challenges <i>Z.X. Cong, C.T. Tran, K.C. Chew, K.T. Wong and C.H. Tan</i></p> <p>(P136) Design and Construction of Changi Jewel – A Large Span Roof Structures <i>J.Y.R. Liew, Z.X. Cong, E. Ong, C.T. Tran, K.C. Chew and T. Wang</i></p> <p>(P124) Design and Experimental Research of Xinghai Bay Cross-Sea Bridge in China <i>H.L. Wang, S.F. Qin and Z. Zhang</i></p> <p>(P163) Funan Redevelopment – Singapore’s Creative Intersection <i>Z.X. Cong, C.T. Tran, K.C. Chew, J.Y.R. Liew, K.T. Wong and S.L. Sherman</i></p> <p>(P244) Development of Energyhub@Sea Concept <i>F. Adam, M.M. Aye, P. Dierken, I. Drummen and F. Kalofotias</i></p> <p>(P146) Complexities and Effectiveness of Australian Standard for Concrete Structures - AS 3600-2018 <i>S.H. Chowdhury and Y C. Loo</i></p>

14:00 – 15:30	<p>Parallel Session 08: Advanced Concrete Technology (1) @ Room P3 Chair: Professor Tetsuya Ishida (University of Tokyo) and Dr Vinh Dao (The University of Queensland)</p> <p>(P041) Macroscale and Microscale Studies on Time-Dependent Mechanical Properties of Concrete with Alkali Silica Reactions <i>Y. Okano and Y. Takahashi</i></p> <p>(P199) Carbonation Progress Mechanism of Cement containing Different Amounts of Powder Admixtures <i>T. Iyoda</i></p> <p>(P200) Influence of Pore Structure Changed by Carbonation using GGBFS Cement on Water Permeability <i>J. Nakamura, H. Mizuno and T. Iyoda</i></p> <p>(P201) Examination of Evaluation Method of Hydration Potential of Dry Sludge Powder focusing on Hydration Reaction <i>M. Araki, K. Ohkawa and T. Iyoda</i></p> <p>(P212) Sulfuric Acid Resistance of Cement Pastes containing Fly Ash and Limestone Powder <i>S. Wanna, W. Saengsoy, P. Toochinda and S. Tangtermsirikul</i></p> <p>(A275) Evolution of Zero-Stress Temperature and Tensile Creep in High Performance Concrete at Early Age <i>A. Dabarera, V. Mahagamage, L. Li and V. Dao</i></p>
14:00 – 15:30	<p>Parallel Session 09: Young Researchers' Papers (2) @ Room P4 Chair: Professor Yozo Fujino (Yokohama National University)</p> <p>(P053) Cyclic Testing of Bonded Post-Tensioned Interior Slab-Column Connections with Shear Stud <i>A. Luckkikanun, U. Prawatwong and P. Warnitchai</i></p> <p>(P066) Shear Behavior of Steel Reinforced Ultra High-Performance Concrete Members with Hybrid Fibers <i>M. Bermudez and C.C. Hung</i></p> <p>(P078) Quantitative Evaluation of Buildability in 3D Concrete Printing based on Shear Vane Test <i>K. Nishijo, M. Ohno and T. Ishida</i></p> <p>(P084) Effects of Web Position on Shear Resistance Mechanism of UFC Beams <i>M. Kato, K. Yamagishi, Y. Yamashita and J. Niwa</i></p> <p>(P101) Study on Repair and Strengthening of Steel Girder End with Section Loss Using CFRP Members Bonded by VaRTM Technique <i>V. Thay, N. Tuvaan, H. Nakamura and T. Matsui</i></p> <p>(P110) Inelastic Deformation Ratio Evaluation and Application to the Seismic Codes <i>A. Mechaala, C. Benazouz, S. Guezouli and Y. Mehani</i></p>

14:00 – 15:30	<p>Parallel Session 10: SS05 - “Emerging Techniques for Structural Health Monitoring of In-Service Bridges” organised by Professor T.H. Yi (Dalian University of Technology) and Dr J. Li (Curtin University)</p> <p>@ Room P5</p> <p>Chair: Professor Hao Wang (Southeast University) and Professor Sheng-En Fang (Fuzhou University)</p> <p>(Invited Lecture) (SS05-19) Improving the Effectiveness of Structural Damage Detection with Higher Order Responses and Phase Space Technique <i>J. Li, Z. Peng and H. Hao</i></p> <p>(SS05-08) Clustering-Based Automated Identification of Modal Parameters of a Long-Span Bridge <i>H. Wang and J.X. Mao</i></p> <p>(SS05-09) Calculation of Structural Response and Response Sensitivity with Improved Substructuring Method <i>J.J. Li, G.J. Yang, H.P. Zhu, S. Wang, Y.Y. Yan and S.S. Zhang</i></p> <p>(SS05-10) Damage Detection Incorporating Constraint Satisfaction Problems with Modal Interval Analysis <i>S.E. Fang and B. Zhang</i></p> <p>(SS05-11) A Forensic Investigation of the Xiaoshan Ramp Bridge Collapse <i>W.B. Peng, Z.W. Tang, X.J. Cao, L.L. Chen, F. Dai and E. Taciroglu</i></p> <p>(SS05-12) Response Reconstruction using Kalman Filter With Unknown Measurement Noise for Structural Health Monitoring <i>X.H. Zhang and Z.B. Wu</i></p>
15:30 – 16:00	<p>Afternoon Coffee/Tea Break @ Plaza Foyer</p>
<p>16:00 – 17:45: Parallel Sessions 11 to 15</p>	
16:00 – 17:45	<p>Parallel Session 11: Advances in Mechanics and Materials (1)</p> <p>@ Plaza Terrace Room</p> <p>Chair: Professor J.N. Reddy (Texas A & M University)</p> <p>(P137) Experimental Study on Stress-Strain Properties of Ultra-high Performance Fibre Reinforced Concrete under Uniaxial Compression and Tension <i>J.-H. Liu, Z. Quraishi, M. Ding and B. Yang</i></p> <p>(P143) Investigation on Dynamic Bond-Slip Behaviour between Steel Reinforcement and Concrete under High Loading Rate <i>X.J. Huang, C.Y. Wang, S. Wang and S.B. Kang</i></p> <p>(P191) Buckling Analysis of Nanoplates Incorporating Surface Stress Effects <i>F. Lin, Y. Xiang and H.-S. Shen</i></p> <p>(A260) Enhanced Tensile Properties of Nanocomposites with Hydrogen Functionalized Graphene Containing Defects <i>R. Sun, L.L. Li, L.L. Ke and J. Yang</i></p> <p>(P273) Mechanical Behavior of Kirigami Graphene under Shear Loading <i>M. Gamil, Q.X. Pei and Y.Y. Zhang</i></p> <p>(P105) The Roles of Mechanics Courses in Student-Centered Civil Engineering Education <i>Q.Y. Xing</i></p>

16:00 – 17:45	<p>Parallel Session 12: SS13 -“Effective use of high strength S690 steels in construction” organized by Professor K.F. Chung and Dr H.C. Ho (Hong Kong Polytechnic University)</p> <p>@ Room P2 Chair: Professor Kwok-fai Chung and Dr H.C. Ho (Hong Kong Polytechnic University)</p> <p>(SS13-01) Structural Adequacy of High Strength S690 Welded Sections with Various Heat Energy Input <i>K.F. Chung</i></p> <p>(SS13-02) Correction of True Stress Strain Curves of Cylindrical and Funnel Shaped S690 Tensile Coupons after Onset of Necking <i>H.C. Ho and K.F. Chung</i></p> <p>(SS13-03) Structural Behaviour of T-Joints Between S690 Cold-Formed Circular Hollow Sections under Brace Axial Compression <i>Y.F. Hu and K.F. Chung</i></p> <p>(SS13-04) Structural Behaviors of S690 High Strength SHS Columns under Axial Compression <i>M. Xiao and K.F. Chung</i></p> <p>(SS13-05) Hysteretic Behaviour of S690 Steel Plates and Welded Sections under Cyclic Tests with Various Loading Protocols <i>Y.B. Guo, H.C. Ho, and K.F. Chung</i></p>
16:00 – 17:45	<p>Parallel Session 13: Structures under Extreme Loadings (1)</p> <p>@ Room P3 Chair: Professor Hong Hao (Curtin University)</p> <p>(P095) Dynamic Behavior of Foundation for Steel Post of Rockfall Protection Fence under Impact Loading <i>S. Kondo, M. Komuro, N. Kishi and Y. Yamamoto</i></p> <p>(P135) Experimental Study on Dynamic Behaviors of Flexural Strengthened RC Beams with AFRP Sheet Having 1660 G/m² Mass under Consecutive Impact Loading <i>S. Le Huy, M. Komuro, N. Kishi and T. Kawarai</i></p> <p>(P162) Glazed Facades under Blast Loading: An Investigation of the Post-Fracture Response of Laminated Glass under High Strain-Rates <i>S.C. Angelides and J.P. Talbot</i></p> <p>(P099) A Leverage-Type Variable Friction Damper for Seismic Protection of Structural Systems <i>L.-Y. Lu, T.-K. Lin and R.-J. Jheng</i></p> <p>(P153) Evaluating and Enhancing Seismic Performance of Water Distribution System in terms of Fire Suppression <i>G.J. Hou and Q.W. Li</i></p> <p>(P121) Estimations for Equivalent Static Wind Loads of Dome Roof Structures <i>Y.L. Lo and C.H. Wu</i></p> <p>(P008) Seismic Response of RC Frame Buildings Considering In-Plane and Out-of-Plane Behaviour of Unreinforced Masonry Infills <i>M. Albano, G. Gesualdi, L.R.S. Viggiani and D. Cardone</i></p>

16:00 – 17:45	<p>Parallel Session 14: Young Researchers’ Papers (3) @ Room P4 Chair: Professor José L. Torero (University College London)</p> <p>(P113) Effect of Number of Additional Bolts Outside Splice Plates on Behaviour of Frictional Type Bolted Joints with a Filler Plate <i>H. Moriyama, T. Takai, T. Yamaguchi and S. Kozai</i></p> <p>(P148) Investigation of Combined ASR and DEF Induced Damage on Concrete by Using RBSM Simulation <i>Y. Wang, P. Jiradilok and K. Nagai</i></p> <p>(P158) Theoretical Modeling and Evaluation of Thermal Stress Evolution of Concrete at Early Age by Temperature Stress Testing Machine <i>G.F. Ou, T. Kishi, Z.H. Lin and T. Kamada</i></p> <p>(P165) Experimental Research and Parametric Study on the Fatigue Performance of Slotted Tubular Connection based on the Effective Notch Stress Approach <i>Y.X. Luo, R.L. Ma, M.J. He, R. Fincato and S. Tsutsumi</i></p> <p>(P178) A Simplified Method for Estimating Differential Displacement in Consideration of Structural Nonlinearity and Coupling Between Adjacent Viaducts during Earthquake <i>K. Narita and M. Tokunaga</i></p> <p>(P184) Utilization of Machine Learning for Analyzing Concrete Material Consumption in Japan <i>N.A. Vios, M. Henry and J. Opon</i></p>
16:00 – 17:45	<p>Parallel Session 15: SS05 - “Emerging Techniques for Structural Health Monitoring of In-Service Bridges” organised by Professor T.H. Yi (Dalian University of Technology) and Dr J. Li (Curtin University) @ Room P5 Chair: Professor Jian Guo (Zhejiang University of Technology) and A/Professor Shibing Lin (Dalian University of Technology)</p> <p>(Invited Lecture) (SS05-04) A Fuzzy Logic Vibration Control Method based on Vibration Serviceability Criteria <i>Z.P. Han and J. Chen</i></p> <p>(SS05-02) Study on Temperature Time-Lag Effect of Concrete Small Box Girder Bridge <i>K. Yang, Y.L. Ding, C.F. Wan and H.W. Zhao</i></p> <p>(SS05-03) Seismic Evaluation of Structures Based on Simplified Increment Dynamic Analysis <i>F. Wang, Q. Chen and Z.Z. Guo</i></p> <p>(SS05-05) Damage Detection for Rotating Flexible Beam Based on Time Domain Sensitivity Analysis <i>D.H. Yang, Z.R. Lu and L. Wang</i></p> <p>(SS05-06) Output-Only Modal Analysis of a Footbridge Based on Compact-Bandwidth Regularization <i>L. Wang, Z.Y. Yin and Z.R. Lu</i></p> <p>(SS05-07) Analysis of Wind Induced Vibration of Stayed Cable of Cross-Sea Bridge Based on Monitoring Data <i>J. Guo, J.X. He and C.J. Hu</i></p> <p>(SS05-13) A Separation Method of Structural Multi-Source Response based on Variational Mode Decomposition <i>J. Teng, Y. Cui and W. Lu</i></p>
18:00 – 20:00	<p>Welcome Reception @ Plaza Foyer</p>

Thursday 5th December 2019	
08:00 – 17:30	Registration @ Plaza Foyer
09:00 – 10:45	<p>Plenary Session 2 @ Plaza Terrace Room Chair: Professor Yeong-Bin Yang (Chongqing University) and Professor Chien Ming Wang (The University of Queensland)</p> <p>FIRE OR HIGH TEMPERATURE STRUCTURAL BEHAVIOUR, ARE THEY SAME? <i>Professor José L. Torero (University College London)</i></p> <p>CHANGING OUR UNDERSTANDING OF REINFORCEMENT CORROSION IN MARINE CONCRETE STRUCTURES <i>Professor Robert E. Melchers (University of Newcastle)</i></p> <p>PETAL AUXETICS WITH TARGETED POISSON'S RATIOS USING ISOGEOMETRIC SHAPE OPTIMIZATION <i>Professor Ser Tong Quek (National University of Singapore)</i></p>
10:45 – 11:15	Morning Coffee/Tea Break @ Plaza Foyer
11:15 – 13:00: Parallel Sessions 16 to 20	
11:15 – 13:00	<p>Parallel Session 16: SS08 - “Recent Research Advances on Innovative Techniques for Structural Health Monitoring” organised by Dr J. Li and Dr Q. Kong (Curtin University) and Professor G. Song (University of Houston)</p> <p>@ Plaza Terrace Room Chair: Dr Jun Li and Dr Qingzhao Kong (Curtin University) and Professor Gangbing Song (University of Houston)</p> <p>(Invited Lecture) (SS08-08) Monitoring of Bolt Looseness using Piezoelectric Transducers: 3D Numerical Model with Verification <i>F. Wang, N. Li and G. Song</i></p> <p>(SS08-01) Drive-By Bridge Parameter Identification: An Overview <i>J.T. Li and X.Q. Zhu</i></p> <p>(SS08-07) A “Percussion”-Based Approach for Bolt Looseness Inspection <i>Q.Z. Kong, J.X. Zhu and H. Hao</i></p> <p>(SS08-02) Health Monitoring of Bridges using RPAs <i>M. Rashidi and B. Samali</i></p> <p>(SS08-03) Application of Machine Learning Algorithms in Structural Health Monitoring Research <i>Y. Hamishebahar, H.Z. Li and H. Guan</i></p> <p>(SS08-04) Using Deep Learning Technique for Recovering Lost Measurement Data <i>G. Fan, J. Li and H. Hao</i></p> <p>(SS08-05) Using Novel Time Frequency Analysis Method for Time-Varying System Identification <i>Y. Xin, H. Hao, J. Li and M. Rajakaruna</i></p>



11:15 – 13:00	<p>Parallel Session 17: Advances in Mechanics and Materials (2) @ Room P2 Chair: Professor Siu-Lai Chan (Hong Kong Polytechnic University)</p> <p>(P016) Evaluation of Compressive Arch Action of Reinforced Concrete Beams <i>S. Wang, X.J. Huang, S.B. Kang and J.S. Xu</i></p> <p>(P047) Large Displacement Analysis of Pinned-Fixed Circular Arches with Different Rise-to-Span Ratios using an Isogeometric Approach <i>D. Vo and P. Nanakorn</i></p> <p>(P048) A Total Lagrangian Isogeometric Timoshenko Beam Formulation for Large Displacement Analysis of 2D Frames <i>V. Chorn, D. Vo and P. Nanakorn</i></p> <p>(P058) Estimating Remaining Ductility of Corroded Steel by Using Surface Roughness Characteristics based on Tensile Coupon Test Results <i>N. Gathimba and Y. Kitane</i></p> <p>(P065) Charpy Absorbed Energy of Cold Press-Bent Steel Plates Made of SM520C <i>D. Kitazume, J. Nie, K. Ono, K. Anami, T. Miyashita, Y. Mishima and T. Iida</i></p> <p>(P104) A Study on the Vertical Pull-off Testing and Horizontal Shear Testing Strength of External Wall Tile Adhesion <i>C.-T. Liao and P.-J. Wu</i></p> <p>(P177) The Proposal of Data Driven Maintenance of RC Slab Focusing on Deterioration Mechanism <i>T. Furukawa, T. Ishida and J. Fang</i></p>
11:15 – 13:00	<p>Parallel Session 18: Concrete and Composite Structures (2) @ Room P3 Chair: Professor Raymond Ian Gilbert (UNSW Sydney) and Dr Phuong Jonathan Tran (RMIT University)</p> <p>(P194) Effects of Slab Thickness on The Fatigue Performance of RC Slabs: An Analytical Investigation <i>P.R. Deng and T. Matsumoto</i></p> <p>(P208) Impacts of Global Warming and Variable Airborne Chloride Exposure on Concrete Structures in Hokkaido, Japan <i>M. Henry and Y. Tojo</i></p> <p>(P245) Equal-Capacity Design Method of Precast RC Shear Wall with Unconnected Vertical Distributing Reinforcement <i>Z.W. Cao, X.W. Xiao and S.Q. Zhang</i></p> <p>(P132) FE Simulation of a New Type of Concrete-Filled Double Skin Steel Tube with Stiffeners under Axial Loading <i>M. Ding, L. Shen and B. Yang</i></p> <p>(P176) Effect of Confining Pressure on Compressive Strength and Ductility of Square Section Concrete Filled Tube Column <i>V. Greepala, T. Chareerat, P. Wongthong and P. Kongna</i></p> <p>(P214) Experimental Study on Cross Arms inserted in Concrete-Filled Circular GFRP Tubular Columns <i>F. Xie, J. Chen, Q.Q. Yu and X.L. Dong</i></p> <p>(P238) General Prediction Model of Compressive Strength for Confined Concrete <i>H. Minakawa, T. Ueda and T. Wisuthseriwong</i></p>

11:15 – 13:00	<p>Parallel Session 19: Young Researchers' Papers (4) @ Room P4 Chair: Professor Robert Melchers (Newcastle University)</p> <p>(P203) Coupled Effects between Stress and Expansion of Solid Materials: A Physically-Based Model and Extensive Implications <i>Q.X. Le, J.L. Torero and V. Dao</i></p> <p>(P217) Seismic Upgrade of Self-Centering RC Walls Using SMA Bars and Replaceable Energy Dissipating Devices <i>B. Wang and S.Y. Zhu</i></p> <p>(P232) Fatigue Behavior of Air-Entrained High Strength Concrete with Blast Furnace Slag Fine Aggregates under Freezing and Thawing <i>M.A. Farooq, Y. Sato, K. Niitani and H. Yokota</i></p> <p>(P235) Porcupine Quill: Buckling Resistance Analysis & Design for 3D Printing <i>Y.L. Tee, M. Leary and P. Tran</i></p> <p>(P241) A Preliminary Study on The Performance of a Flexible Sheetlike Blade Wind Turbine Inspired by the Borneo Camphor Seed <i>Y.-J. Chu and H.-F. Lam</i></p> <p>(P252) Development of New Oil Damper with Stiffness for Architectural Vibration Control and Experimental Research on Structural Characterization <i>A. Yokoyama and O. Takahashi</i></p> <p>(P257) Research on Prevention of Collapse of Existing Dangerous Masonry Walls by Reinforcement using Polyurea Resin and Aramid Fiber Tape <i>S. Keita, T. Osamu, T. Mikiya, O. Junji, M. Jun and N. Toshihiko</i></p>
11:15 – 13:00	<p>Parallel Session 20: Retrofitting and Maintenance @ Room P5 Chair: A/Professor Alex Ng (University of Adelaide)</p> <p>(P009) Structural Strengthening of Concrete Footings using External Prestressing <i>X. Lu and R.S. Aboutaha</i></p> <p>(P010) Experimental Investigation of Fire-Damaged RC Columns Retrofitted with CFRP or Steel Jackets <i>J. Xu, C. Tan and R.S. Aboutaha</i></p> <p>(P032) Assessment and Repair for North Breakwater Dome in Wakkanai Port <i>K. Hase, A. Saitou, S. Tomisawa, I. Sakashita and H. Yokota</i></p> <p>(P083) Cyclic Loading Tests on Seismic Retrofit of Reinforced Concrete Bridge Pier with Embedded Seismic Retrofit Rebar and Aramid Fiber-Reinforced Plastic Sheets Jacketing <i>T. Terasawa, M. Akimoto, H. Nishi and M. Komuro</i></p> <p>(P157) Optimal Bridge Maintenance Algorithms Considering Subordinate Relation with Bridge Members <i>S. Jin, J.H. Lee, Y. Choi, J. Lim and J.S. Kong</i></p> <p>(P227) A Backup Marine Fender System <i>J. Sul, F. Albermani, E. Knauth and C. Collins</i></p> <p>(P256) Study on Practical Application of Damping Control Ceiling <i>T. Nagaoka, T. Yasuda, Y. Iwashita and O. Takahashi</i></p>
13:00 – 14:00	<p>Lunch @ Plaza Foyer</p>

14:00 – 15:30: Parallel Sessions 21 to 25	
14:00 – 15:30	<p>Parallel Session 21: SS08 - “Recent Research Advances on Innovative Techniques for Structural Health Monitoring” organized by Dr J. Li and Dr Q. Kong (Curtin University) and Professor G. Song (University of Houston)</p> <p>@ Plaza Terrace Room</p> <p>Chair: A/Professor Xinqun Zhu (University of Technology Sydney) and A/Professor Heung-Fai Lam (City University of Hong Kong)</p> <p>(Invited Lecture) (SS08-18) Bayesian Model Class Selection for a Vector Autoregressive Model <i>J.H. Yang and H.F. Lam</i></p> <p>(SS08-06) New Regularization Techniques and Sensor Placement for Structural Damage Detection <i>R.R. Hou and Y. Xia</i></p> <p>(SS08-09) Ship Collision Identification of Yangluo Bridge Based on Cointegration and Kalman Filter <i>D.S. Li and J.Z. Huang</i></p> <p>(SS08-10) Propagation Analysis of Stress Wave in Steel-Concrete Composite Structures <i>X. Nie, Y.D. Zhao, H.B. Chen and B. Xu</i></p> <p>(SS08-11) Active Thermal Wave Testing for Structural Adhesive Defects of Hidden Frame Glass Curtain Walls <i>X.B. Hong, J.F. Lin and Z.Q. Luo</i></p> <p>(SS08-12) Three-Dimensional Reconstruction of Underwater Pier Based on Sonar Image <i>S.F. Jiang, Y.M. Zeng, S. Shen and X.W. Lin</i></p>
14:00 – 15:30	<p>Parallel Session 22: Bridges and Embankment</p> <p>@ Room P2</p> <p>Chair: Professor Faris Albermani (Central Queensland University)</p> <p>(P011) Flexural Behavior Degradation of Corroded AASHTO Type II Pretensioned Concrete Girder-Deck System <i>B. Yan and R. Aboutaha</i></p> <p>(P036) Case Study of Soft Ground Countermeasure with More Than 100m Thickness in Japanese Expressway <i>Y. Oda, M. Chutoku, C. Sugawara, K. Sawano, K. Matsuzaki, K. Nagao and H. Ohta</i></p> <p>(P061) Risk Estimation of Bridges and Bridge Networks under Seismic and Subsequent Tsunami Hazards <i>H. Ishibashi, T. Kojima, K. Nanami, M. Akiyama and D.M. Frangopol</i></p> <p>(P109) Development of an Emergency Bridge with the Double End Plate Connection Using High Strength Bolt <i>Y. Mineyama, Y. Sugimoto, K. Sugita and T. Yamaguchi</i></p> <p>(P207) The Role of Reinforced Piles in Stability Analysis of Road Embankment on Soft Ground <i>H.H. Nguyen</i></p> <p>(P211) Resonance Effect of Separate Twin Bridges due to Traffic Load-A Case Study <i>H.Y. Ma, M.L. Ma and Y. Xia</i></p>

14:00 – 15:30	<p>Parallel Session 23: Advanced Concrete Technology (2) @ Room P3 Chair: Dr Shujian Chen and Dr Vinh Dao (The University of Queensland)</p> <p>(P249) Effects of Seawater and Sea-Sand on Concrete Properties: A Review Paper <i>D. Vafaei, X. Ma, R. Hassanli and Y. Zhuge</i></p> <p>(P154) Recycled Waste Glass Powder as Binder for Sustainable Concrete <i>Z. Kalakada and J.H. Doh</i></p> <p>(P182) Engineering Properties of Cement Paste with Fly Ash Substitution and Addition of Alkaline Activator <i>A. Thymotie, V. Setiawan, H.-A. Nguyen and T.-P. Chang</i></p> <p>(P205) A Review of Preplaced-Aggregate Concrete using Recycled Aggregate and Railway Wasted Ballast <i>A. Shibuya and T. Iyoda</i></p> <p>(P237) Polymer-based Composite Materials for Industrialised Building System in Flooding Situations <i>E.N. Saharuddin, W.H. Wan Badaruzzaman and A.W. Al Zand</i></p> <p>(A267) Development of Thermal Energy Storage Concrete with Macro-Encapsulated Pcms <i>T.Y. Lo and H.B. Yang</i></p>
14:00 – 15:30	<p>Parallel Session 24: Young Researchers' Papers (5) @ Room P4 Chair: Professor Gianluca Ranzi (University of Sydney)</p> <p>(P258) Research on the Development of the Semi-Rigid Column Base of Reinforced Concrete-Experimental Study on RC Column with Tapered Part <i>H. Yoshida, T. Yamada, M. Oda and O. Takahashi</i></p> <p>(P269) Prediction of Restrained Expansion and Shrinkage Strains of Reinforced Concrete Specimens by Using Finite Element Analysis <i>S.H. Myint, G. Tanapornraweekit and S. Tangtermsirikul</i></p> <p>(P216) Influence of PVA and PP Fibres at Different Volume Fractions on Mechanical Properties of 3D Printing Concrete <i>L. Pham, S. Lin, R. Gavina and P. Tran</i></p> <p>(A274) Volume Change of High Performance Concrete at Early Ages based on an Advanced Temperature Stress Testing Machine <i>L. Li, H.H. Nguyen, A. Dabarera and V. Dao</i></p> <p>(A278) Probability Distribution and Extreme Response of Wave Run-up on a Breakwater with a Tilted Deck <i>M.M. Han and C.M. Wang</i></p> <p>(P271) Assessing the Viability of Visual Vibrometry for Use in Structural Engineering <i>V. Slinger, D. Lao, V.T. Nguyen, S. Singh and J. Gattas</i></p>

14:00 – 15:30	<p>Parallel Session 25: Current Issues in Construction @ Room P5 Chair: A/Professor Peter Wong (RMIT University)</p> <p>(P024) Load-Carrying Capacity and Failure Model of Scaffolds Together with Shores in Construction <i>J.L. Peng, C.S. Wang, C.W. Wu and C.L. Pan</i></p> <p>(P051) Applicability of Building Information Modeling (BIM) Integrated Augmented Reality (AR) in Building Facility Management <i>S. Khan and K. Panuwatwanich</i></p> <p>(P155) Project Management for the Out Patient Department Building - Planning for Hospital Design & Construction <i>P. Chaiseri and T. Issariyarutthanon</i></p> <p>(P189) Factors Affecting the International Training Transfer for Capacity Development of Road Asset Management in Lao PDR <i>A. Bounnak and M. Henry</i></p> <p>(P276) A Real-Time Computer Vision System for Workers' PPE and Posture Detection in Actual Construction Site Environment <i>A. Moolhaldin, F. Lamari, M. Marc and B. Trigunarsyah</i></p>
15:30 – 16:00	<p>Afternoon Coffee/Tea Break @ Plaza Foyer</p>
<p>16:00 – 17:45: Parallel Sessions 26 to 30</p>	
16:00 – 17:45	<p>Parallel Session 26: SS01 - “Structural Monitoring and Control” organized by Professor C.B. Yun, Professor Y. Luo and Professor Y. Duan (Zhejiang University) @ Plaza Terrace Room Chair: Professor Yaozhi Luo and Professor Yuanfeng Duan (Zhejiang University)</p> <p>(SS01-01) Development of Elasto-Magneto-Electric Sensors for Total-Stress in Large-Diameter Cables <i>X.Y. Hu, Y.F. Duan, Y.Z. Luo and C.B. Yun</i></p> <p>(SS01-02) Multiple Tuned Mass Dampers for Wind Induced Vibration Control of a Cable-Supported Roof <i>X.C. Wang, Y.F. Duan, C.B. Yun and W.J. Lou</i></p> <p>(SS01-03) Cable Damage Identification of Tied-Arch Bridge Using Convolutional Neural Network <i>Q. Y. Chen, C. B. Yun and Y. F. Duan</i></p> <p>(SS01-04) PCA-based Temperature Effect Compensation in Monitoring of Steel Beam using Guided Waves <i>J.Q. Tu, C.B. Yun, X. Xu, Z.F. Tang and J.J. Wu</i></p> <p>(SS08-16) Monitoring of Bolt Preload using a Single PZT Instrumented Smart Washer <i>M.Z. Luo, W.J. Li, C. Hei, Y. Xu and G.B. Song</i></p> <p>(SS08-17) Quasi-Static Cyclic Test and Damage Evaluation on Concrete-Encased Frame-Reinforced Concrete Tube Structure <i>L. Zeng and Y.F. Xiao</i></p> <p>(A226) Bayesian Framework for SHM-Based Bridge Reliability Assessment: Parametric and Nonparametric Approaches <i>Y.Q. Ni and R. Chen</i></p>

16:00 – 17:45	<p>Parallel Session 27: SS04 - “Steel & Concrete Structures and Fire Engineering” organised by Professor J. Ho (Guangzhou University)</p> <p>@ Room P2 Chair: Professor Johnny Ho and Dr M.H. Lai (Guangzhou University)</p> <p>(SS04-01) Cold-Formed High Strength Steel Tubular T-Joints – New Design Rules <i>M. Pandey and B. Young</i></p> <p>(SS04-02) Cold-Formed Steel Elliptical Beam-Columns: An Experimental Insight <i>M.-T. Chen and B. Young</i></p> <p>(SS04-03) Fire and Pyrolysis Modelling of Flame Retarded Polymer Composites with Molecular Dynamics <i>A.C.Y. Yuen, T.B.Y. Chen and G.H. Yeoh</i></p> <p>(SS04-04) An Impatience-based Pedestrian Model for Building Evacuation <i>E.W.M. Lee and M. Shi</i></p> <p>(SS04-05) Dilatancy of Cement Powder Paste <i>M.H. Lai, Q. Wang and J.C.M. Ho</i></p> <p>(SS04-06) A Path Dependent Stress-Strain Model for Concrete-Filled-Steel-Tube Column <i>M.H. Lai and J.C.M. Ho</i></p> <p>(SS04-07) Mesoscopic Modelling of Damage Behavior of Very High Strength Concrete under Uniaxial Compression <i>K.S. Kristombu Baduge, P.S.M. Thilakarathna, P. Mendis, V. Vimonsatit and H. Lee</i></p>
16:00 – 17:45	<p>Parallel Session 28: Advances in Structural Engineering (1)</p> <p>@ Room P3 Chair: Dr Hossein Askarinejad (ARA Institute of Canterbury)</p> <p>(SS09-01) Composites for Alternative Railway Sleepers <i>W. Ferdous, A. Manalo, M. Muttashar, P. Yu, R. Kakarla, C. Salih and P. Schubel</i></p> <p>(SS09-02) Modal Analysis Experiments on Prestressed Concrete Sleepers <i>D. Nielsen and E. Palmer</i></p> <p>(SS09-03) Effect of Different Structural Parameters on Track Lateral Stability <i>H. Askarinejad1, F. Yu, L. Qiu and J. Cui</i></p> <p>(P098) Numerical Analysis of Seepage for Saturated-Unsaturated Pavement Structure under Rainfall Conditions <i>J.H. Zheng, Q.Y. Xing and D.W. Wang</i></p> <p>(P169) Scaled Boundary Finite Element Method for Two-Dimensional Crack Problems in Multi-Field Media <i>C.V. Nguyen and J. Rungamornrat</i></p> <p>(P218) Nonlinear Analysis for Hysteretic Behavior of RC Joints Considering Bond-Slip <i>D.Y. Kim</i></p> <p>(A181) Testing and Modelling Reinforced Concrete Columns exposed to Elevated Temperatures for Residual Capacities <i>S.D. Tran, B.D. Le and V. Dao</i></p>

16:00 – 17:45	<p>Parallel Session 29: Advances in Mechanics and Materials (3) @ Room P4 Chair: Professor Johnny Ho and Dr M.H. Lai (Guangzhou University) (A006) New Advances of Constitutive Models for Soft Materials-Hydrogels and Shape Memory Polymers <i>Z. Liu and R. Huang</i> (P057) Study on Compression Fatigue of Rubber Bearings Used in Low Temperature Environment <i>S.J. Wang, W.C. Lin and J.S. Hwang</i> (P062) Experimental and Analytical Study on Lead Rubber Bearings under Non-Proportional Plane Loading <i>T. Sato, T. Imai, S. Kuji, K. Ueda and H. Nishi</i> (P173) Experimental Study on Seismic Behaviors of a New Type of Transferring Joint with Top Steel Column Embedded to the Panel Zone <i>J.Y. Gao, J.S. Fan and G.J. Hou</i> (P239) A Fracture Mechanics Approach to Estimate Fracture-Induced Unstable Failure in Steel Structures <i>X. Qian and T. Liu</i> (P265) Calculation of Structural Response and Response Sensitivity with Improved Substructuring Method <i>J.J. Li, G.J. Yang, S. Weng and Y.Y. Yan</i> (A125) Technolab™ - New “Take” on Old Approaches for Teaching Mechanics and Dynamics <i>N. Haritos</i></p>
16:00 – 17:45	<p>Parallel Session 30: Advanced Analysis and Test Methods (1) @ Room P5 Chair: A/Professor Lihai Zhang (The University of Melbourne) (P002) Rigid-Mass Vehicle Model for Identification of Bridge Frequencies Concerning Pitching Effect <i>J.P. Yang and B.-L. Chen</i> (P019) Anti-Plane Response Induced by a Partially Filled Trapezoidal Alluvial Valley <i>W.S. Shyu, T.J. Teng and C.S. Chou</i> (P023) Use of Deep Learning Algorithm to Detect Road Damage and Closures after the 2016 Kumamoto Japan Earthquake <i>Y. Maruyama, R. Sezaki and S. Nagata</i> (P215) Updating the Reliability of Existing RC Structures in a Marine Environment Incorporating Spatial Variations <i>K. Masuda, S. Srivaranun and M. Akiyama</i> (P219) Structural Damage Detection with Modal Strain Energy using Convolution Neural Network <i>G. Chen and S. Teng</i> (SS03-09) Numerical and Experimental Analysis of Higher Harmonic Generation of Rayleigh Wave at Debonding in FRP-Retrofitted Concrete Structures <i>C.T. Ng and H. Mohseni</i> (A279) Sizing Box-Type Floating Breakwaters for Prescribed Wave Transmission Coefficient <i>J.C. Park and C.M. Wang</i></p>
19:00 – 22:30	<p>Conference Banquet @ Podium Ballroom, Level P, Rydges Hotel Emcee: Professor Johnny Ho</p>

Friday 6 th December 2019	
08:00 – 09:00	Registration @ Plaza Foyer
09:00 – 10:45	<p>Plenary Session 3 @ Plaza Terrace Room Chair: Professor Tamon Ueda (University of Hokkaido)</p> <p>INNOVATION AND PRACTICE IN BUILDING STRUCTURE DESIGN <i>Professor James Ding Jiemin (Tongji Architectural Design (Group) Co., LTD)</i></p> <p>WHY ACADEMICS SHOULD TAKE AN INTEREST IN STRUCTURAL CODES <i>Professor David A. Nethercot (Imperial College London)</i></p> <p>EXPERIMENTAL AND NUMERICAL STUDY OF FLEXURAL-TORSIONAL BUCKLING OF WEB-TAPERED HIGH-STRENGTH STEEL I-BEAMS <i>Professor Mark Bradford (UNSW Sydney)</i></p>
10:45 – 11:15	Morning Coffee/Tea Break @ Plaza Foyer
11:15 – 13:00: Parallel Sessions 31 to 35	
11:15 – 13:00	<p>Parallel Session 31: SS07 - “Structural Performance and Protection against Blast and Impact Loads” organised by Dr W Chen, Dr T. Pham, Dr X. Zhang and Dr J. Li (Curtin University) @ Plaza Terrace Room Chair: Dr Thong Pham (Curtin University) and Professor Yifei Hao (Tianjin University)</p> <p>(Session Keynote) (SS07-01) Fused Bridge Structures under Impact Loading <i>Y.F. Wu, Y.W. Zhou, B. Hu, X.X. Huang and S.T. Smith</i></p> <p>(SS07-02) Performance of Bio-Mimetic Cellular Structures under Impulsive Loads <i>A. Ghazlan, T. Ngo, V. Le and T. Nguyen</i></p> <p>(SS07-03) Experimental Study on Cross Arms Inserted in Concrete-Filled Circular Gfrp Tubular Columns <i>F. Xie, J. Chen, Q.Q. Yu and X.L. Dong</i></p> <p>(SS07-04) Mesoscale Modelling of Autoclaved Aerated Concrete subjected to Impact <i>Y.F. Hao, Z.Y. Miao and C.Y. Liu</i></p> <p>(SS07-06) Flexural Performance of Precast Segmental Concrete Beams Prestressed with CFRP Tendons <i>T.M. Pham, T.D. Le and H. Hao</i></p> <p>(SS07-15) Impact Resistance of Large-Rupture-Strain FRP-Confined Concrete <i>Z.W. Yan, Y.L. Bai, J.G. Dai, Q. Han and X.L. Du</i></p> <p>(SS07-23) Residual Axial Capacity of UHPCC-FST Column under Contact Explosion <i>H. Wu, Z.G. Wang and Q. Fang</i></p>

11:15 – 13:00	<p>Parallel Session 32: SS02 - “Structural health monitoring of civil engineering structures based on field test data” organised by Professor F. Zhang (Harbin Institute of Technology), Professor C.W. Kim (Kyoto University) and A/Professor H.F Lam (City University of Hong Kong)</p> <p>@ Room P2 Chair: Professor Chul-Woo Kim (Kyoto University) and Professor Feng-Liang Zhang (Harbin Institute of Technology)</p> <p>(Invited Lecture) (SS02-01) Scour Detection of Railway Bridges by Microtremor Monitoring <i>C.W. Kim, K. Yoshitome, Y. Goi, F.L. Zhang and S. Kitagawa</i></p> <p>(SS02-02) Vibration Monitoring of a Real Steel Plate Girder Bridge under Artificial Local Damage and Varying Temperature <i>T. Hirooka, C.W. Kim, G. Hayashi and Y. Goi</i></p> <p>(SS02-03) Detecting Loosening Bolts of Highway Bridges by Image Processing Techniques <i>A. Long, C.W. Kim and Y. Kondo</i></p> <p>(SS02-04) An Efficient Approach for Detecting Bolt Loosening in Periodically Supported Structures <i>T. Yin and H.P. Zhu</i></p> <p>(SS02-05) Bayesian System Identification Based on Auto-Regressive Models with Applications for Full-Scale Structures <i>J.H. Yang and H.F. Lam</i></p> <p>(SS02-06) Bayesian System Identification of a Folding Screen Building <i>J. Hu and H.F. Lam</i></p> <p>(SS02-07) Performance Investigation of a New Precast Superimposed Slab Shear Wall Building and a Cast-In-Situ Building by a Bayesian Method <i>Y.C. Ni, Y.C. Yun, Q.W. Zhang and K.C. Lu</i></p>
11:15 – 13:00	<p>Parallel Session 33: SS08 - “Recent Research Advances on Innovative Techniques for Structural Health Monitoring” organised by Dr J. Li and Dr Q. Kong (Curtin University) and Professor G. Song (University of Houston)</p> <p>@ Room P3 Chair: Professor W.I. Liao (National Taipei University of Technology) and Professor Shao-Fei Jiang (Fuzhou University)</p> <p>(Invited Lecture) (SS08-20) Analysis of Second Harmonic Generation of Lamb Wave at Fatigue Cracks <i>C.T. Ng, Y. Yang and A. Kotousov</i></p> <p>(SS08-13) Health Monitoring of RC Wall Structures using Piezoceramic-based Sensors <i>W.I. Liao and C.K. Chiu</i></p> <p>(SS08-19) Advanced Applications of Emerging 2D Nanomaterials in Construction Materials <i>Q.H. Zhang, K. Sagoe-Crentsil and W.H. Duan</i></p> <p>(SS08-14) Study on Early Strength Monitoring of Nondispersive Underwater Concrete Based on Piezoelectric Smart Aggregate <i>J. Wang, S.F. Jiang, W.J. Yang, C.L. Zhang and S.L. Ma</i></p>

	<p>(SS08-15) Internal Liquid Level Guided Wave Detection using Piezoelectric Transducers and Deep Learning Method <i>X.B. Hong, B. Zhang and Z.Q. Luo</i></p> <p>(SS08-21) A Novel Hybrid Deep Learning-Based Algorithm to Detect Structural Damage in a Beam-Like Structure <i>O.R. Alazzawi and D.S. Wang</i></p> <p>(SS08-22) Multi-Factor Prediction of Electrical Resistivity for Concrete Structural Health Monitoring using XGBoost Algorithm <i>Y.M. Huang, W. Dong, B. Lehane and G.W. Ma</i></p>
11:15 – 13:00	<p>Parallel Session 34: Steel Structures @ Room P4 Chair: Professor Dinar Camotim (University of Lisbon)</p> <p>(P070) An Experimental Study on Local Buckling Strength of Welded Box Section Stub-Columns Made of SBHS400 <i>K. Sobajima, J. Nie, T. Miyashita, S. Okada, N. Takeshima and K. Ono</i></p> <p>(P072) Proposal to Improve the DSM Design of Cold-Formed Steel Fixed-Ended Columns Failing in Global Modes <i>P.B. Dinis, D. Camotim, A. Landesmann and A.D. Martins</i></p> <p>(P075) An Experimental Study on Buckling Strength of Stainless Steel Columns With Gusset Plates <i>A. Matsuo, S. Sthapit, A. Shibuya, Y. Shimura, Y. Kobayashi and K. Ono</i></p> <p>(P117) Bearing Limit State of High-Strength Frictional Bolted Joints consisted of Several Bolts Based on Bolt Hole Deformation <i>R. Sakura, H. Moriyama and T. Yamaguchi</i></p> <p>(A141) Study on Mechanical Performance for a Newtype Composite Structure of Corrugated Steelweb and Stainless Steel Core Plate <i>Y.S. Ni, X.F. Zhang and Y. Zhang</i></p> <p>(P193) Experimental Study of a Prefabricated Steel Frame System with Buckling-Restrained Braces <i>Y. Xu, H. Guan, H. Karampour, Y.-C. Loo and X. Zhou</i></p> <p>(P264) Experimental and Numerical Analysis on The Mechanical Behaviour of Box Beam Cold-Formed Steel Built-Up C-Sections <i>V.T. Trung, T. Chaisomphob, T.T. Ha and E. Yamaguchi</i></p>
11:15 – 13:00	<p>Parallel Session 35: Advanced Analysis and Test Methods (2) @ Room P5 Chair: Professor Quek Ser Tong (National University of Singapore)</p> <p>(P242) Investigation into Application of Artificial Intelligence to Façade <i>M. Bowman, S. Kesawan, S. Sivapalan and T. Sivaprakasam</i></p> <p>(P243) Barriers in Implementing the Convolutional Neural Network Damage Detector <i>M. Bowman, S. Kesawan, S. Sivapalan and T. Sivaprakasam</i></p> <p>(P087) Device Development for Compressive Stress Field Using Piezoelectric Actuator <i>Kento Obuchi and Mutsumi Miyagawa</i></p> <p>(P122) Development of 1D and 2D Portable Shaking Table Test System as Educational Materials <i>O. Tsujihara, K. Uenoyama, T. Okamoto and T. Yamamura</i></p>

	<p>(P151) A Voxel-Based Method for Automated Road Surface Extraction from Mobile Laser Scanning Data in Expressway Environment <i>T.T. Ha, T. Chaisomphob, E. Lueangvilai and L.T. Hong</i></p> <p>(P210) Single Shot Multibox Detector Based Active Monitoring for Anti-Collision Between Vessels and Bridges <i>Y. Xia, L.M. Chen, W.C. He and L.M. Sun</i></p> <p>(P149) Evaluation of Waste Recycling in Venous Industry Using Environmental Indicator <i>Y. Shibasaki, Y. Ogawa and K. Kawai</i></p>
13:00 – 14:00	Lunch @ Plaza Foyer
14:00 – 15:30: Parallel Sessions 36 to 40	
14:00 – 15:30	<p>Parallel Session 36: SS07 - “Structural Performance and Protection against Blast and Impact Loads” organised by Dr W Chen, Dr T. Pham, Dr X. Zhang and Dr J. Li (Curtin University)</p> <p>@ Plaza Terrace Room Chair: Dr Xihong Zhang and Dr Jingde Li (Curtin University)</p> <p>(Session Keynote) (SS07-05) Local Failure Mechanism of RC Slabs subjected to Deformable Projectile Impact <i>M. Beppu, S. Kataoka and H. Ichino</i></p> <p>(SS07-08) Dynamic Tensile Properties of Clay Brick at High Strain Rates <i>Y.W. Chiu, X. Zhang, H. Hao and N. Salter</i></p> <p>(SS07-07) Investigation of Safety Distance Effect on Gas Storage Tanks subjected to Vapor Cloud Fast Deflagration by Using FLACS <i>J.D. Li and H. Hao</i></p> <p>(SS07-13) Experimental and Numerical Investigation of Reinforced Concrete Pile Subjected to Near-Field Non-Contact Underwater Explosion <i>S.T. Li, Q.S. Yan and Y.Q. Chen</i></p> <p>(SS07-14) Experimental Study and Numerical Simulation for the Anti-Explosion Performance of Steel Plate-Reinforced Concrete Composite Beam <i>X.F. Wang, L. Li, L. Zhang, J.B. Liu, D.F. Kong and G.J. Sun</i></p> <p>(SS07-19) Dynamic Behavior of Jacket Foundation for Offshore Wind Turbine Subjected to Ship Impact <i>D.W. Gao and C.W. Zhang</i></p> <p>(SS07-21) Experimental and Theoretical Research on Tensile Resistance Capacity of Eight-Bolted Footplate in Steel Transmission Tower <i>X.M. Xue, H.L. Yuan, X.M. Wang and F. Wen</i></p>
14:00 – 15:30	<p>Parallel Session 37: SS03 - “Data Science in Civil Engineering: Efficient Algorithms and Applications” organised by Dr J.H. Yang (Tongji University), Dr J. Hu (Hong Kong Polytechnic University) and A/Professor H.F. Lam (City University of Hong Kong)</p> <p>@ Room P2 Chair: Dr Jia-Hua Yang (Tongji University) and A/Professor Heung-Fai Lam (City University of Hong Kong)</p> <p>(SS03-01) An Efficient MCMC-Based Bayesian Model Updating Method using Parallel Technique <i>J. Hu and H.F. Lam</i></p>

	<p>(SS03-02) Bayesian Framework for SHM-Based Bridge Reliability Assessment: Parametric and Nonparametric <i>Y.Q. Ni and R. Chen</i></p> <p>(SS03-03) Bayesian Modeling of Axial Strain-Hardening Behaviour in Railway Ballast <i>M.O. Adeagbo and H.F. Lam</i></p> <p>(SS03-04) Field Vibration Tests and Bayesian Modal Identification of a Footbridge <i>F.L. Zhang and Y.C. Ni</i></p> <p>(SS03-05) Bayesian Learning and Model Class Selection for Complex Dynamic Systems <i>J.H. Yang and H.F. Lam</i></p> <p>(SS02-08) Damage Detection Based on Bayesian Factor using Ambient Vibration Data <i>F.L. Zhang, C.W. Kim and Y. Goi</i></p>
14:00 – 15:30	<p>Parallel Session 38: Offshore Structures @ Room P3 Chair: Professor Frank Adam (University of Rostock)</p> <p>(A074) Using Rotational Inertia Dampers to Suppress Heave and Pitch Motions of Semi-Submersible Platform in the Shallow Sea <i>K. Bi, R.S. Ma and H. Hao</i></p> <p>(P100) Influence of Soil-Structure Interaction on Dynamics of Offshore Wind Turbine Structure <i>T. Wansuwan and Y. Sapsathiarn</i></p> <p>(A128) Combined Offshore Spar and Partially Closed Fish Cage <i>Y.I. Chu and C.M. Wang</i></p> <p>(A248) Integration Between VLFS and Wave Energy Converters for Reducing Hydroelastic Response of VLFS and Extracting Wave Energy <i>H.P. Nguyen and C.M. Wang</i></p> <p>(P262) Design and Construction of the Large Concrete Floating Pier at Incheon Harbor <i>K.H. Jung, S.H. Lee, H.S. Kim and Y. H. Choi</i></p> <p>(A277) Experimental and Numerical Study for Optimizing the Sheltering Effect of a Floating Windbreak <i>J. Lyu, C.M. Wang and M.S. Mason</i></p>
14:00 – 15:30	<p>Parallel Session 39: Structures under Extreme Loadings (2) @ Room P4 Chair: Professor Limin Sun (Tongji University)</p> <p>(P223) Research on Suspended Tuned Mass Damper in Wind Vibration Control of the Steel Chimney <i>X.W. Li, W.X. Shi and Y. Zheng</i></p> <p>(P229) Simplified Model for Wind-Induced Comfort Analysis and Design of Mega-Structures with Viscous Damped Outriggers <i>Y. Yang, X. Zhao, W. Shi and J. Li</i></p> <p>(P230) Automatic Optimal Design of Steel Modular Buildings under Different Wind Load Levels <i>J.C. Guo and X. Zhao</i></p> <p>(P007) Restoring Force Drift Angle Relationship Models of Reinforced Concrete Columns with Side Walls</p>

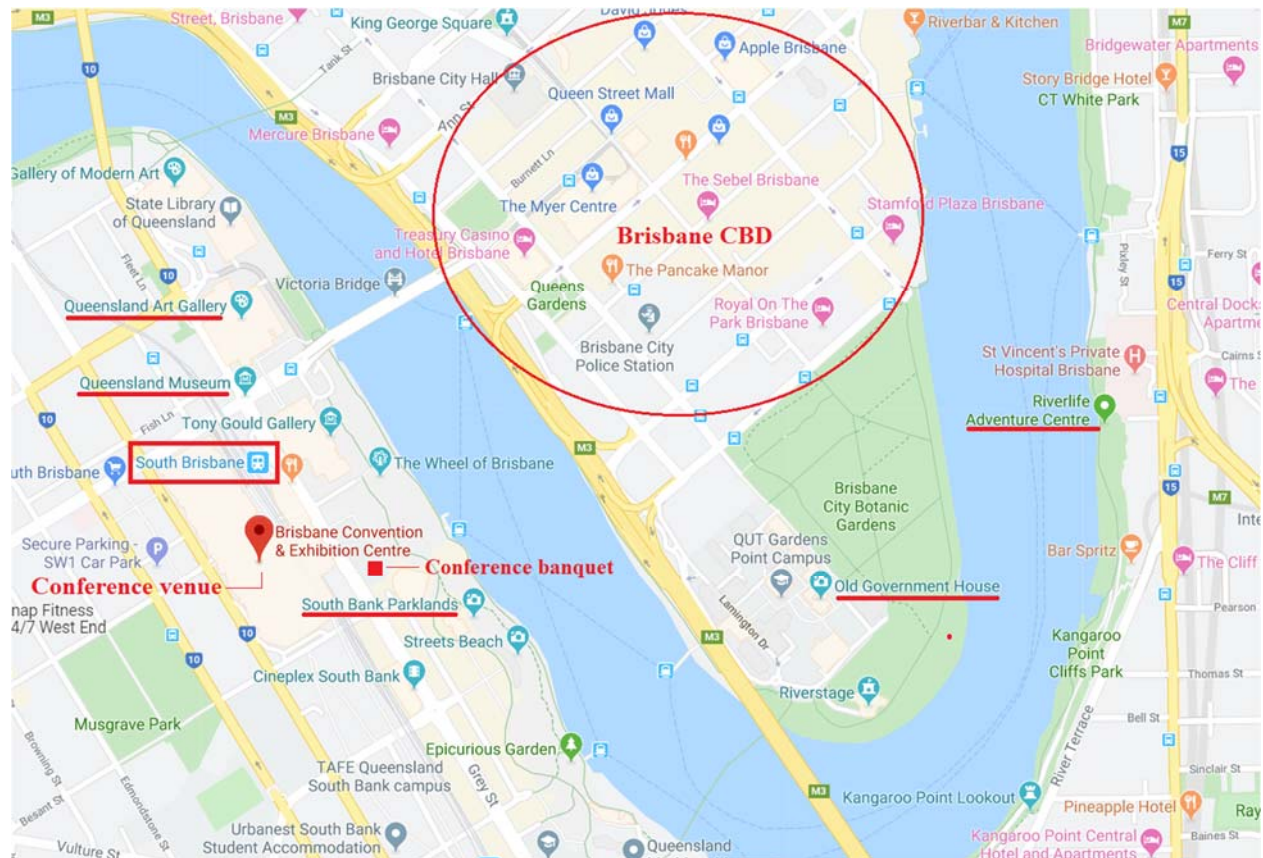
	<p><i>D. Kato, R. Kuramoto, N. Abe and T. Nakamura</i></p> <p>(P112) Seismic Evaluation of Non-Ductile Reinforced Concrete Columns Failed in Shear <i>Y.A. Li, W.C. Shen and P.W. Weng</i></p> <p>(P037) Reliability-Based Constant-Damage Ductility Demand Spectra of Mid-Rise RC Building Structures using Modified Equivalent Linearization Method <i>L.Z. Nugroho, C.K. Chiu, F.P. Hsiao and S. Gautama</i></p>
14:00 – 15:30	<p>Parallel Session 40: Structural Stability, Dynamics and Optimization (1) @ Room P5 Chair: Professor Chunwei Zhang (Qingdao University of Technology)</p> <p>(P114) Research on Structural Pendulum Vibration Control Methods Based on Active Rotary Inertia Driver <i>C.W. Zhang and H. Wang</i></p> <p>(P179) Evaluation of Vibration Characteristics of RC and PRC Beam Members Under Cyclic Train Loading <i>M. Tokunaga and K. Narita</i></p> <p>(A236) Vibration Absorber Using Heavy Hanging Column and Adjustable Rotational Spring <i>D. Chen and C.M. Wang</i></p> <p>(A261) Dynamic Instability of Functionally Graded Graphene Reinforced Composite Arches <i>S.Y. Zhao, Z.C. Yang, J. Yang and S. Kitipornchai</i></p> <p>(A270) Hencky-Bar Chain Model for Buckling Analysis of Beams and Frames <i>W.H. Pan and C.M. Wang</i></p> <p>(A185) A New Approach for the Natural Frequency Analysis of Frames using Exact Finite Elements <i>H. Ma, J. Xu and P. Tan</i></p>
15:30 – 16:00	Afternoon Coffee/Tea Break @ Plaza Foyer
16:00 – 17:45: Parallel Sessions 41 to 45	
16:00 – 17:45	<p>Parallel Session 41: SS07 - “Structural Performance and Protection against Blast and Impact Loads” organised by Dr W Chen, Dr T. Pham, Dr X. Zhang and Dr J. Li (Curtin University) @ Plaza Terrace Room Chair: Dr Wensu Chen (Curtin University) and Dr Xuemei Liu (The University of Melbourne)</p> <p>(Session Keynote) (SS07-24) Non-Linear Behavior of Structures subjected to Combination of Impact and Blast Loads <i>C. Zhang</i></p> <p>(SS07-09) Improved Impact Resistance of the Australian Runway Pavement <i>X.M. Liu, S. Ali, S. Fawzia and D. Thambiratnam</i></p> <p>(SS07-16) Deformation and Failure of Hybrid Composite Sandwich Beams with a Metal Foam Core <i>Q.H. Qin, W. Zhang and J.X. Zhang</i></p> <p>(SS07-17) Dynamic Response of Double-Layer Gradient Sacrificial Layers <i>B.H. Su, Q.H. Qin, J.X. Zhang and Z.L. Xu</i></p> <p>(SS07-18) Resistance of Lattice Core Sandwich Cylinders to Internal Blast Loading <i>J.F. Li, W. Zhang, J.X. Zhang, H.M. Li, Z.L. Xu and Q.H. Qin</i></p>

	<p>(SS07-20) Interfacial Bond Behaviour of Fiber Reinforced Polymer Sheets Externally Bonded to Geopolymer Concrete <i>C. Yuan, W.S. Chen and H. Hao</i></p> <p>(SS07-10) Effect of Relative Density on The Mechanical Behavior of Coral Sand Under High Strain Rate <i>X. Yu, L. Chen, Q. Fang, Y.D. Zhang and J.Y. Fan</i></p> <p>(SS07-22) Influence of Detonation Point on Blast Loads Induced with Cylindrical Charges <i>Y. Fan, L. Chen, Q. Fang and H.B. Xiang</i></p>
16:00 – 17:45	<p>Parallel Session 42: SS03 - “Data Science in Civil Engineering: Efficient Algorithms and Applications” organised by Dr J.H. Yang (Tongji University), Dr J. Hu (Hong Kong Polytechnic University) and A/Professor H.F. Lam (City University of Hong Kong)</p> <p>@ Room P2 Chair: A/Professor Heung-Fai Lam (City University of Hong Kong) and Dr Jun Hu (Hong Kong Polytechnic University)</p> <p>(SS03-06) Reliability Analysis of Reinforced Concrete Beam under Differential Settlement <i>S.A. Alabi, J.O. Afolayan and C. Arum</i></p> <p>(SS03-07) Analysis of Scattering and Mode Conversion of Torsional Guided Waves By Cracks in Pipes Using Time-Domain Spectral Element Method <i>C. Yeung and C.T. Ng</i></p> <p>(SS03-08) System Fatigue Reliability Assessment of Orthotropic Steel Bridge Deck <i>Y.H. Su, X.W. Ye and H.F. Lam</i></p> <p>(SS03-10) Ultrasonic Guided Wave Field Modeling in a One-Side Water-Immersed Steel Plate <i>X.W. Hu, C.T. Ng and A. Kotousov</i></p>
16:00 – 17:45	<p>Parallel Session 43: Advances in Structural Engineering (2)</p> <p>@ Room P3 Chair: A/Professor Zhang Hong (Beijing Institute of Technology)</p> <p>(P076) The Influence of Non-Structural Exterior Wall on The Structural Resistance of Rc Building Frames Against Seismic and Progressive Collapse Failure <i>M.H. Tsai</i></p> <p>(P085) Behavior of Bridge Superstructure Model with Double Spherical Sliding Bearing under Live Load Action <i>H. Oyabu, S. Fujikura, H.M. Nguyen, S. Takeuchi and A. Nakajima</i></p> <p>(P094) Study of Bridge Damages Induced Earthquakes in Japan and Strength Hierarchy Design <i>R. Tokuhashi, K. Tasaki and T. Yoshizawa</i></p> <p>(P111) Investigation into Seasonal Effects on Vibration Frequency and Cable Forces of a Cable-Stayed Bridge Structure <i>C.H. Chen, H.Y. Chang and Y.Q. Tsai</i></p> <p>(P250) Study on Timber Wall Reinforcing with High-performance Fiber Webbing <i>Y. Inoue and O. Takahashi</i></p> <p>(A056) Seismic Fragility Analysis: State of the Art <i>Alqurashi, A. Al-Mosawe and M. Al-Mashaykhi</i></p>

16:00 – 17:45	<p>Parallel Session 44: Structures under Extreme Loadings (3) @ Room P4 Chair: Dr Da Chen (The University of Queensland)</p> <p>(P068) Study on Structural Collapse Behavior of Reinforced Concrete Building under Near-Fault Earthquakes <i>F.P. Hsiao, P.W. Weng, W.C. Shen, Y.A. Li, R.J. Tsai and S.J. Hwang</i></p> <p>(P090) Evaluation of Pulse Wave Effect in Inland Crustal Earthquake Ground Motion <i>N. Nojima and T. Yamamoto</i></p> <p>(P140) Mechanical Properties and Seismic Performance Research on Primary-Secondary Structure for High-Rise Building <i>J. Teng, P.Y. Liu, Z.H. Li and Y.H. Qi</i></p> <p>(P228) Viscous Dampers Based Standardized Design of Modular Steel Structures in Different Seismic Zones <i>B.J. Du and X. Zhao</i></p> <p>(P251) Economical Evaluation of Comprehensive Seismic Risk in Consideration of Construction System, Site and Use <i>A. Satoshi, K. Yuna and T. Osamu</i></p> <p>(P254) Developed Research to Carry out Prediction Damage from Measuring Microtremor <i>R. Omata, T. Baba, Y. Kaito and O. Takahashi</i></p>
16:00 – 17:45	<p>Parallel Session 45: Structural Stability, Dynamics and Optimization (2) @ Room P5 Chair: Professor Zishun Liu (Xi'an Jiaotong University)</p> <p>(A272) Buckling of Circular and Annular Plates via Hencky Bar-Net Model <i>H. Zhang and C.M. Wang</i></p> <p>(P255) Optimal Design for Stability Performance of Super Tall Residential Tower Equipped with Reinforced Concrete Outriggers <i>X. Zhao, J. L. Cai, W.T. Yue and C.Q. Zhang</i></p> <p>(P259) Optimal Placement of Rigid Outriggers for Super Tall Buildings Located in High Seismic Intensity Area Based on Storey Drift Sensitivity Vectors <i>X. Zhao, J. Yao, Y.T. Xu and Y. Yang</i></p> <p>(A102) Shaking Table Tests of Electromagnetic Tuned Mass Dampers for Vibration Control of Structures <i>C.C. Lin, G.L. Lin, Y.J. Chen and T.C. Hung</i></p>
17:45 – 18:00	<p>Closing Ceremony @ Plaza Terrace Room Chair: Professor Chien Ming Wang (The University of Queensland)</p>

Entertainment Map

This map shows places of interest that are in close proximity to the Brisbane Convention & Exhibition Centre.



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