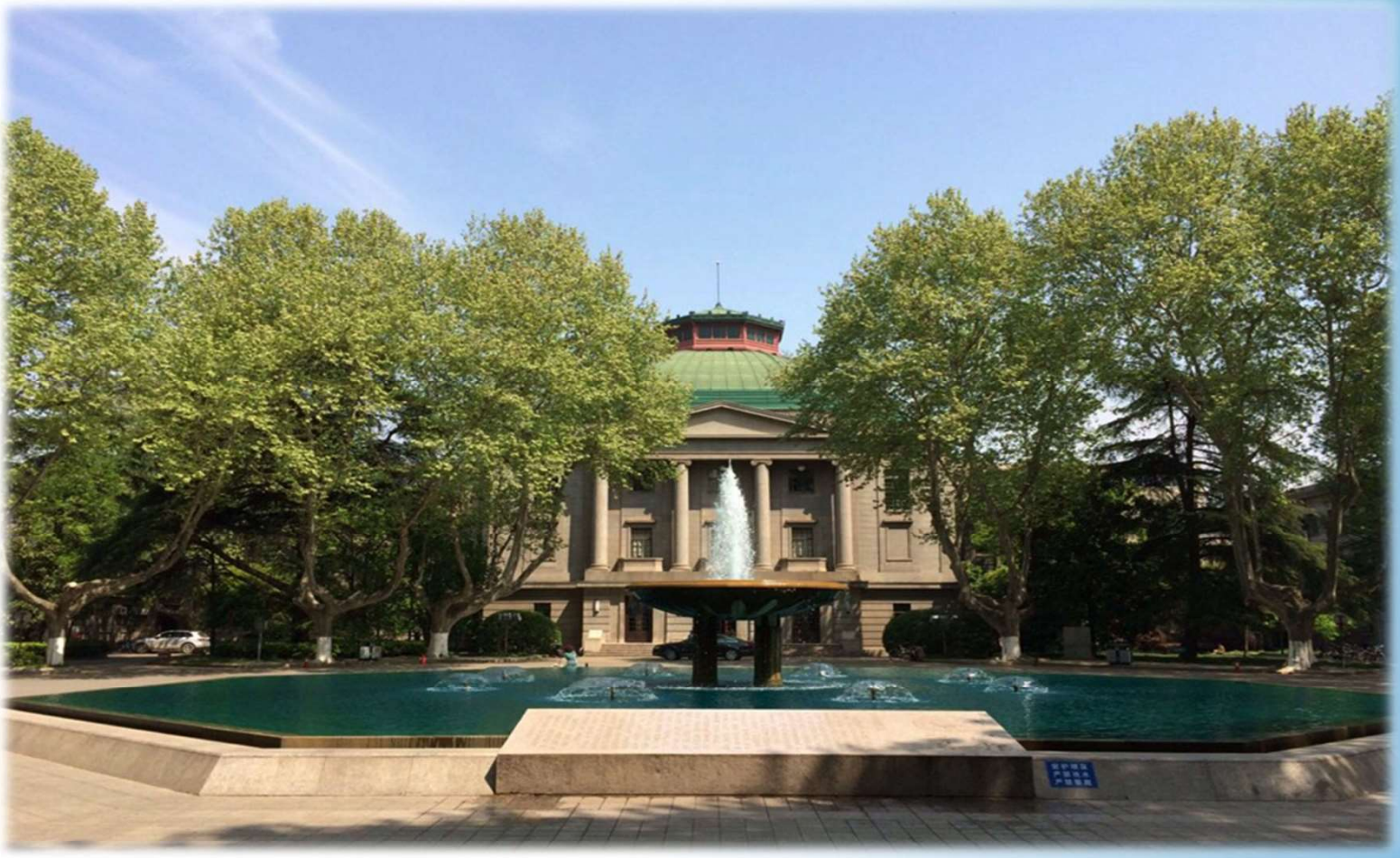
FRPRCS-12 / APFIS-2015

14-16 DECEMBER 2015, NANJING, CHINA

JOINT CONFERENCE OF
THE 12TH INTERNATIONAL SYMPOSIUM ON FIBER REINFORCED POLYMERS
FOR REINFORCED CONCRETE STRUCTURES
& THE 5TH ASIA-PACIFIC CONFERENCE ON FIBER REINFORCED POLYMERS IN STRUCTURES



Final Program

Organized by
International Institute for Urban Systems Engineering
& School of Civil Engineering
& National and Local Unified Engineering Research Center for Basalt Fiber Production and Application Technology
Southeast University

Conference Organization

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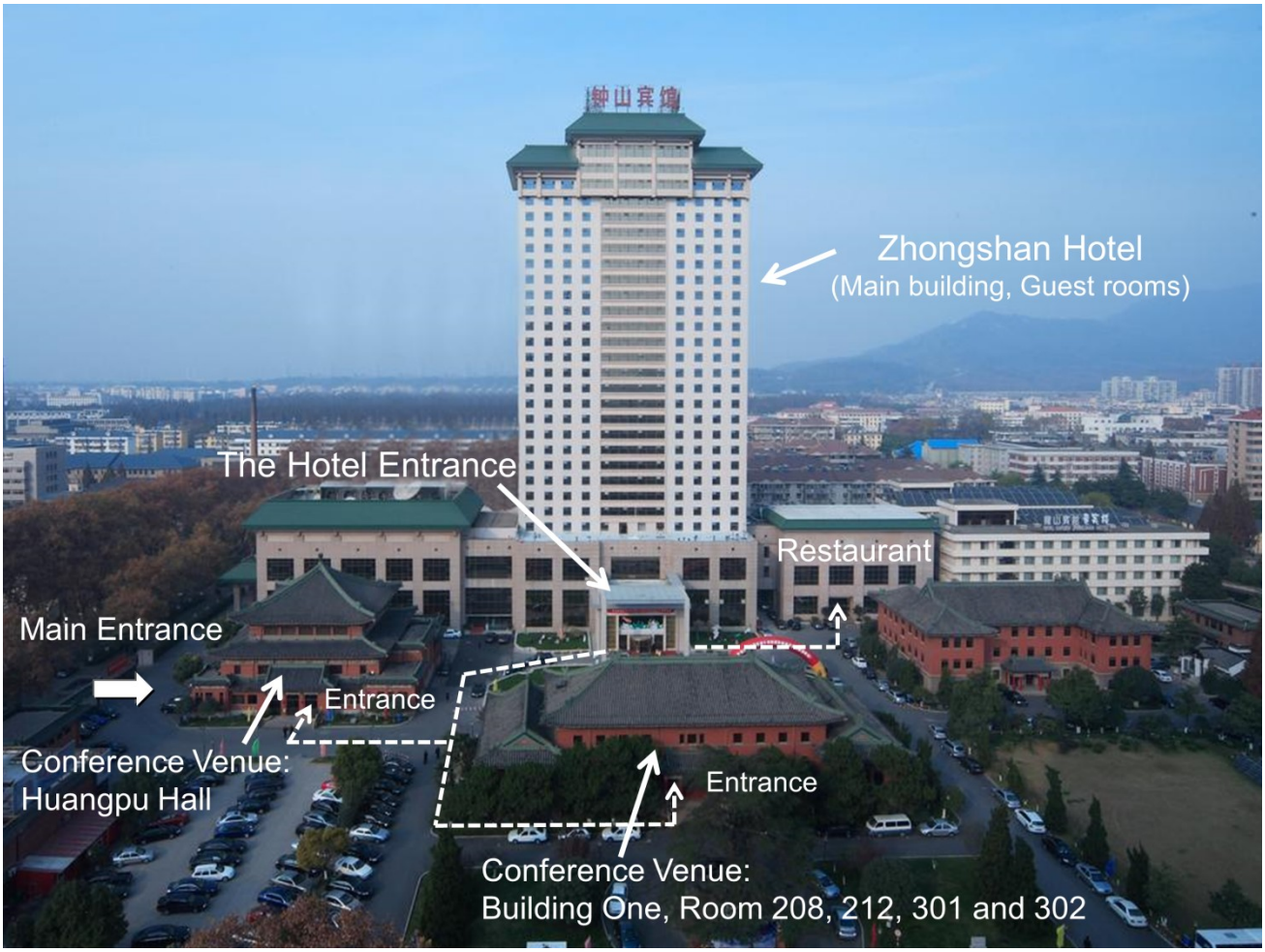
General Information

Conference Venue

Jiangsu Conference Center (Zhongshan Hotel) is the most characteristic pseudo-classic garden hotel in Nanjing city. It covers an area of 35,500 m^2 with a construction area of 56,000 m^2 and boasts a main building decorated to five star standards, 581 VIP guestrooms, more than 1800 dining seats and over 30 venues as to accommodate group of 20 to 800. It is also adequately facilitated with indoor swimming pool, health and recreation center, sauna, chess & card room, bar, ticket center, shopping mall, laundry and a large parking lot with over 300 lots, ranking as one of the largest hotels in Jiangsu. Jiangsu Conference Center is one of the largest convention hotels throughout the whole province with first-rate facilities, service, audio and video equipment as well as elegant and stylish decoration, The Huangpu Hall, with a pseudo-classic tone, is able to accommodate 500 guests and the fully composed Auditorium has a capacity of 800 people, There are 30 other conference venues varied in size for exhibitions.



Symposium Secretariat and Hours

The Symposium Secretariat Desk will be at the entrance of Main building. The Secretariat will handle all question and issues concerning registration, social events and tours. The Secretariat desk will be open at the following dates and times:

Sunday,	**December 13:**	**2:00 pm -8:00 pm**
Monday,	**December 14:**	**8:30 am -5:00 pm**
Tuesday,	**December 15:**	**8:30 am -12:00 am**

Registration to the Symposium

Registration to the Symposium entitles delegates to:

- Attendance of the Symposium Technical Sessions at the Jiangsu Conference Center, from December 14 - 16 morning
- The Technical Visit in the afternoon of December 16
- The Symposium hand-outs(Volume and USB disk of Proceedings, Symposium bag, etc.)
- One coffee break per half-day
- Three lunches, from December 14 -16
- The dinners in the evening of December 14 and 16.
- The banquet in the evening of December 15

Speakers' Facilities

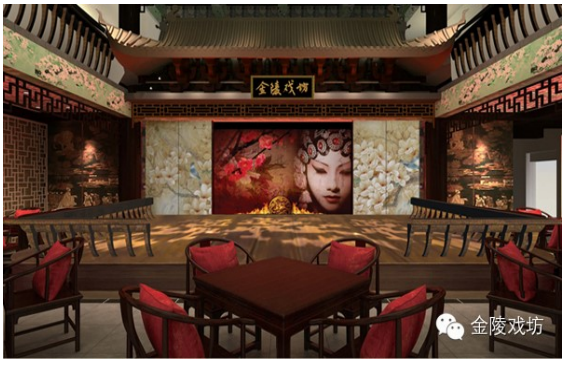
All speakers should submit their presentation (Microsoft PowerPoint format) on a USB Disk (clearly identified with the oral session number, paper ID and presenting author's name) at the time of registration.

Badges

The personal badge is the entrance ticket to all Symposium Sessions; thus participants are kindly requested to always wear their badge. In case of loss of badge, the Symposium Secretariat should be contacted.

The banquet

The official banquet of the Symposium will be offered at the Laomendong Jinling Drama Workshop, starting at 6:30PM on December 15. The Jinling Drama Workshop has the design of a quaint Chinese opera house and can hold hundreds of people. A wide variety of Chinese traditional shows including Peking



Opera, Kunqu Opera and Baiju are staged there and a lot of traditional Nanjing cuisines are also offer there. Registered participants will be welcomed. Buses will depart from the Symposium's hotels at 6:00PM. Please show the banquet ticket (in the symposium bag) to board the buses.

Certificate of Attendance

Participants may contact the Symposium Secretariat, if they wish to have a certificate of attendance of the Symposium.

Brief Schedule

Sunday – 13/12/2015	
14:00 – 20:00	Registration (Attendees can also register on 14th or 15th Dec 2015)
Monday – 14/12/2015	
8:30 – 9:00	Opening Ceremony (Huangpu Hall)
9:00 – 9:40	Keynote Lecture 1 (Huangpu Hall)
9:40 – 10:20	Keynote Lecture 2 (Huangpu Hall)
10:20 – 10:50	Coffee break and Group photo
10:50 – 11:50	Session 1A (Huangpu Hall) Capacity strengthening of concrete, metallic, timber and masonry structures / Seismic strengthening / Field applications, case studies
	Session 1B (301, Building One) Bond behavior
	Session 1C (302, Building One) Characterization of FRP / Durability, long-term performance of FRP / High performance, longevity, and sustainability of structures with FRP
12:00 – 13:00	Lunch
13:15 – 15:00	Session 2A (208, Building One) Capacity strengthening of concrete, metallic, timber and masonry structures / Seismic strengthening / Field applications, case studies
	Session 2B (212, Building One) Bond behavior
	Session 2C (301, Building One) Characterization of FRP / Durability, long-term performance of FRP / High performance, longevity, and sustainability of structures with FRP
	Session 2D (302, Building One) Confinement
15:00 – 15:15	Coffee break
15:15 – 17:15	Session 3A (208, Building One) Capacity strengthening of concrete, metallic, timber and masonry structures / Seismic strengthening / Field applications, case studies
15:15 – 17:15	Session 3B (212, Building One) Bond behavior
15:15 – 17:00	Session 3C (301, Building One) Characterization of FRP / Durability, long-term performance of FRP / High performance, longevity, and sustainability of structures with FRP
15:15 – 17:00	Session 3D (302, Building One) Confinement
17:30 – 19:00	IIFC ExCom and AdvCom meeting (301, Building One)
18:00 – 20:00	Dinner
Tuesday – 15/12/2015	
8:30 – 9:10	Keynote Lecture 3 (Huangpu Hall)

9:10 – 9:50	**Keynote Lecture 4 (Huangpu Hall)**
9:50 – 10:10	**Coffee break**
10:10 – 11:40	**Session 4A (Huangpu Hall)** **Capacity strengthening of concrete, metallic, timber and masonry structures / Seismic strengthening / Field applications, case studies**
	Session 4B (301, Building One) **Bond behavior**
	Session 4C (302, Building One) **All FRP structures / Hybrid structures**
12:00 – 13:00	**Lunch**
13:15 – 15:00	**Session 5A (208, Building One)** **Capacity strengthening of concrete, metallic, timber and masonry structures / Seismic strengthening / Field applications, case studies**
	Session 5B (212, Building One) **Advanced numerical models and simulations**
	Session 5C (301, Building One) **New FRP materials/systems/techniques**
	Session 5D (302, Building One) **Structures reinforced or prestressed with FRP systems**
15:00 – 15:15	**Coffee break**
15:15 – 17:30	**Session 6A (208, Building One)** **Capacity strengthening of concrete, metallic, timber and masonry structures / Seismic strengthening / Field applications, case studies**
15:15 – 17:15	**Session 6B (212, Building One)** **Advanced numerical models and simulations**
15:15 – 17:15	**Session 6C (301, Building One)** **New FRP materials/systems/techniques**
15:15 – 17:30	**Session 6D (302, Building One)** **Structures reinforced or prestressed with FRP systems**
18:00 -21:00	**Banquet**
Wednesday - 16/12/2015	
8:30 – 9:30	**Session 7 (Huangpu Hall)** **Hybrid structures**
9:30 – 9:50	**Coffee break**
9:50 – 10:30	**Keynote Lecture 5 (Huangpu Hall)**
10:30 – 11:10	**Keynote Lecture 6 (Huangpu Hall)**
11:10 – 11:50	**Closing Ceremony (Huangpu Hall)**
12:00 – 13:00	**Lunch**
13:00 – 17:00	**Technical tour**
18:00 – 20:00	**Dinner**

Detailed Program

Sunday – 13/12/2015	
14:00 – 20:00	**Registration (Attendees can also register on 14th or 15th Dec 2015)**
Monday – 14/12/2015	
8:30 – 9:00	**Opening Ceremony (Huangpu Hall)**
9:00 – 9:40	**Keynote Lecture 1 (Huangpu Hall)** **Thanasis Triantafillou** **Chairman: Jianfei Chen**
9:40 – 10:20	**Keynote Lecture 2 (Huangpu Hall)** **Charles E. Bakis** **Chairman: Rudolf Seracino**
10:20 – 10:50	**Coffee Break and Group photo**
10:50 – 11:50	**Session 1A (Huangpu Hall)** **Capacity strengthening of concrete, metallic, timber and masonry structures / Seismic strengthening / Field applications, case studies** **Chairman: Amir Fam**
10:50 – 11:05	Deep embedment strengthening of full-scale shear-deficient reinforced concrete beams Yaser Jemaa, Connah Jones and Samir Dirar
11:05 – 11:20	Evaluation of the models for predicting shear capacity of RC beams strengthened with FRP sheets Ahmed M. Sayed, Xin Wang and Zhishen Wu
11:20 – 11:35	Maintenance and rehabilitation of concrete highway bridges with CFRP composites Bo Yan, Haotian Zhang, Hossien Ataei, and Riyad Aboutaha
11:35 – 11:50	Moment redistribution in CFRP strengthened concrete T-beams: an experimental study Abbas Tajaddini, Tim Ibell, Antony Darby, Mark Evernden
10:50 – 11:50	**Session 1B (301, Building One)** **Bond behavior** **Chairman: Peng Feng**
10:50 – 11:05	Experimental investigation of bond strength for GFRP bars with hollow section J. Bang, S. Kim, M. Ju, S. Lee, G. Park, Y. Park, J. Sim, and C. Park
11:05 – 11:20	Experimental investigation on bonding properties of reactive liquid rubber epoxy in CFRP retrofitted concrete members Amad-Adeen Baiuk, Riyadh Al-Ameri and Bronwyn Fox
11:20 – 11:35	Development length and bond strength of CFRP rod panels (CRP's) bonded to concrete Akram Jawdhari, and Issam Harik
11:35 – 11:50	Boundary condition effects on single shear test Tayyebeh Mohammadi and Baolin Wan
10:50 – 11:50	**Session 1C (302, Building One)** **Characterization of FRP / Durability, long-term performance of FRP / High performance, longevity, and sustainability of structures with FRP** **Chairman: Maurizio Guadagnini**
10:50 – 11:05	Mechanical behavior of natural FRP material for EBR RC strengthening A. Hallonet, L. Michel and E. Ferrier
11:05 – 11:20	Investigations on the energy absorption of CFRP cable system under transverse impact Yu Xiang, Zhi Fang and Changlin Wang
11:20 – 11:35	An experimental investigation on the behaviour of moulded FRP gratings Allan C. Manalo, Lachlan Nicol, Ginghis Maranan, and Mark Jackson
11:35 – 11:50	Creep behavior of BFRP tendon in marine environment for prestressing application Jianzhe Shi, Xin Wang, Zhishen Wu

12:00 – 13:00	**Lunch (Monday – 14/12/2015)**
13:15 – 15:00	**Session 2A (208, Building One)** **Capacity Strengthening of concrete, metallic, timber and masonry structures / Seismic strengthening / Field applications, case studies** **Chairman: Jianguo Dai, Lijuan Chen**
13:15 – 13:30	FRP Strengthening of Strut Members Kiang Hwee Tan and Yu Jie Zhao
13:30 – 13:45	Behaviour of reinforced concrete beams strengthened with textile reinforced mortar (TRM) Asad-Ur-Rehman Khan, Fawwad Masood
13:45 – 14:00	In situ diagonal compression tests on masonry panels strengthened by FRP and FRCM Francesca Ferretti, Anna Rosa Tilocca, Barbara Ferracuti and Claudio Mazzotti
14:00 – 14:15	An analysis of membrane action in one-way concrete members externally bonded with FRP Yihua Zeng, Robby Caspeele, Stijn Matthys and Luc Taerwe
14:15 – 14:30	Experimental tests on RC walls with openings strengthened by FRP Cosmin Popescu, Gabriel Sas, Cristian Sabau, Thomas Blanksvärd and Björn Täljsten
14:30 – 14:45	Structural performance of fibre reinforced concrete beams with natural flax FRP strengthening Libo Yan, Liang Huang
14:45 – 15:00	Axial strength of CFRP strengthened concrete columns under elevated humid environments Mohd Zuwairi Samsuddin, Raizal Rashid, and Riyad Aboutaha
13:15 – 15:00	**Session 2B (212, Building One)** **Bond behavior** **Chairman: Charles E. Bakis, Baolin Wan**
13:15 – 13:30	Investigating the effect of bonded area on FRCM-concrete bond using statistical analysis Kyle C.M. Stratton and Ahmad Rteil
13:30 – 13:45	Subcritical debonding of FRP-to-concrete bonded interface under synergistic effect of load, moisture, and temperature Shahrooz Amidi, Jialai Wang
13:45 – 14:00	Characterization of shear strength of FRP anchors F. Ceroni, R. Cuzzilla
14:00 – 14:15	Bond tests on inorganic matrix–grid composites applied on masonry Bilotta A., Ceroni F., Iovinella I., Balsamo A. Nigro E., Pecce M.
14:15 – 14:30	Bond tests on NSM FRP strengthening using cementitious matrices for concrete structures Del Prete I., Bilotta A. Bisby L., Nigro E.
14:30 – 14:45	GFRP-to-timber bonded joints: adhesive selection Chuang Miao, Dilum Fernando, Henri Bailleres and Michael Heitzmann
14:45 – 15:00	Tensile strength for straight FRP anchors in RC structures Enrique del Rey Castillo, Rhys Rogers , Michael Griffith, and Jason Ingham
13:15 – 15:00	**Session 2C (301, Building One)** **Characterization of FRP / Durability, long-term performance of FRP / High performance, longevity, and sustainability of structures with FRP** **Chairman: Thanasis Triantafillou, Issam E. Harik**
13:15 – 13:30	Fundamental study on joint strength using tapping screw for GFRP Yukihiro Matsumto, Yuya Inoue and Kazunari Matsuno

13:30 – 13:45	The long-term performance of the anchor system with high-performance Li Jia, Zhi Fang, Bing Tu, Yu Zhang, Kuangyi Zhang
13:45 – 14:00	Effect of rubber toughening on the durability of FRP composites and FRP-concrete interface Jia-Wei Shi, Hong Zhu and Zhi-Shen Wu
14:00 – 14:15	Fatigue life and mechanism of BFRP composite at different stress ratio Xing Zhao, Xin Wang, Zhishen Wu
14:15 – 14:30	Monitoring of strain development in CFRP-wrapped concrete columns damaged by alkali aggregate reaction T.Kubat, R.Al-Mahaidi and A.Shayan
14:30 – 14:45	Strength of GFRP RC beams after sustained loading C. Mias, M. Guadagnini, L. Torres, C. Barris, H. Fergani
14:45 – 15:00	Shear performance of GFRP bars embedded in concrete beams with crack in different environments Wenrui Yang, Xiongjun He, Li Dai
13:15 – 15:00	**Session 2D (302, Building One)** **Confinement** **Chairman: Emmanuel Ferrier, Scott T. Smith**
13:15 – 13:30	Confining concrete cover of GFRP tube reinforced concrete columns with polymer grids Weiqiang Wang, M. Neaz Sheikh and Muhammad N. S. Hadi
13:30 – 13:45	Strength of concrete columns externally reinforced with composite materials Tomasz Trapko, Dorota Urbańska and Tomasz Kowalik
13:45 – 14:00	Measurement of axial stress distributions in FRP-confined concrete columns using tekscan pressure sensors J.G. Teng, J.J. Zeng and J.F. Chen
14:00 – 14:15	On the representation of stress-strain behaviour of concrete under combined FRP and steel confinement G. Lin, T. Yu and J.G. Teng
14:15 – 14:30	A new triaxial testing with FRP confinement Jiafei Jiang, Xi Wu, Pingcheng Xiao and Benben Li
14:30 – 14:45	Uni-axial compressive tests on masonry columns confined by FRP and FRCM Andrea Incerti, Andrei Vasiliu, Barbara Ferracuti and Claudio Mazzotti
14:45 – 15:00	Evaluation of axial and lateral strain variation and efficiency in CFRP-confined concrete cylinders Nisreen Salameh, Raafat El-Hacha and Khaled Abdelrahman
15:00 – 15:15	**Coffee Break**
15:15 – 17:15	**Session 3A (208, Building One)** **Capacity strengthening of concrete, metallic, timber and masonry structures / Seismic strengthening / Field applications, case studies** **Chairman: Jinguang Teng, Dawei Zhang**
15:15 – 15:30	Effects of temperature on the CFRP confining pressure in strengthened concrete columns M.R Raizal Saifulnaz, M.H Azmi, A Riyad, P.Alireza
15:30 – 15:45	Shear strengthening of cracked RC structures under service loading condition-a case study T. Imjai and M. Guadagnini
15:45 – 16:00	Three edge-bearing performances of RCP and SYN-FRCP repaired with externally bonded CFRP Yeonho Park, Ali Abolmaali and Josh Beakley

16:00 – 16:15	Small-diameter CFRP strands for strengthening steel bridge girder Hamid Kazem, Sami Rizkalla, Rudolf Seracino and Akira Kobayashi
16:15 – 16:30	Flexural tests on RC beams strengthened with NSM FRP bars bonded with cementitious grout Del Prete I., Bilotta A. Bisby L., Nigro E.
16:30 – 16:45	Study of the effect of arching action on the behaviour of FRP strengthened concrete bridge deck slabs through FEA Y. Zheng, L.P Xia
16:45 – 17:00	Study on moment-curvature behavior of concrete column reinforced by steel-fiber reinforced polymer composite bars Zeyang Sun, Wenchao Xiao, Gang Wu, and Zhishen Wu
17:00 – 17:15	Strengthening effects of bonding AFRP plate on shear load-carrying capacity of RC beams for submerged application Yusuke Kurihashi, Hiroshi Mikami, Masato Komuro and Norimitsu Kishi
15:15 – 17:15	**Session 3B (212, Building One)** **Bond behavior** **Chairman: Kiang Hwee Tan, Thiru Aravinthan**
15:15 – 15:30	Bond strength of FRP-to-concrete joints under moist conditions Hasret Aydin, Rebecca J. Gravina and Phillip Visintin
15:30 – 15:45	Derivation method of bond-slip model of FRP-to-concrete interface at high temperatures considering the free end slip Kun Dong, Ke-xu Hu
15:45 – 16:00	Bond behavior between basalt fiber reinforced polymer sheet and concrete substrate: effects of elevated temperatures and sustained load Zhongyu Lu, Guijun Xian, Hui Li and Tamon Ueda
16:00 – 16:15	Effect of glass fiber fabrics isolation layer on the adhesion bond behaviours between CFRP plates and steel substrates Jun He, Guijun Xian, Hui Li
16:15 – 16:30	Bond durability of fatigued CFRP/steel double lap joints protected with chemical silane exposed to marine environments Daniel Borrie, Xiao-Ling Zhao RK Singh Raman and Yu Bai
16:30 – 16:45	Pullout behaviour of FRP anchors in clay bricks Yi Tao, Xiao-long Zheng, Ling-jun Zhong, Qing-xuan Shi and Jian-Fei Chen
16:45 – 17:00	Effect of matrix on bond between FRCM and masonry Alessandro Bellini, Barbara Ferracuti and Claudio Mazzotti
17:00 – 17:15	Bond behaviour between CFRP laminates and steel members under different loading rates Alaa Al-Mosawe, Riadh Al-Mahaidi, Xiao-Ling Zhao
15:15 – 17:00	**Session 3C (301, Building One)** **Characterization of FRP / Durability, long-term performance of FRP / High performance, longevity, and sustainability of structures with FRP** **Chairman: Alper Ilki, Guijun Xian**
15:15 – 15:30	Durability of GFRP bars in concrete beams H. Fergani, M. Guadagnini, C. Lynsdale and C. Mias
15:30 – 15:45	Evaluation of bend strength calculation of fiber-reinforced polymer stirrups Fei Peng and Weichen Xue

15:45 – 16:00	Durability of GFRP bars in concrete under humidity environment Daoguang Jia, Jize Mao, Huiying Jin, Qingyong Guo, Lei Sun
16:00 – 16:15	Mechanical degradation on flexural properties of FRP laminates under hot/wet environment Xu Jiang, Xuhong Qiang, Henk Kolstein, Frans Bijlaard
16:15 – 16:30	Effect of weathering conditions on durability of flax FRP composite used as concrete confinement material Libo Yan, Liang Huang
16:30 – 16:45	Strain rate and temperature effects on the dynamic tensile behaviors of glass and basalt fiber reinforced polymer composites Huaian Zhang, Yiming Yao, Barzin Mobasher, Liang Huang, Deju Zhu
16:45 – 17:00	Fatigue life prediction for design of steel beams strengthened with CFRP L.L. Hu, P. Feng, X.L. Zhao
15:15– 17:00	**Session 3D (302, Building One)** **Confinement** **Chairman: Stijn Matthys, Jialai Wang**
15:15 – 15:30	Stress-strain model of FRP-confined concrete under cyclic compression Pengda Li, Yu-Fei Wu
15:30 – 15:45	Axial compression performances of concrete filled flax-basalt hybrid fibers reinforced FRP tubes Yuanyuan Xia, Guijun Xian, Hui Li
15:45 – 16:00	Partially confined RC columns Sahar Y. Ghanem and Issam E. Harik
16:00 – 16:15	Concrete-filled square steel tube with FRP-confined concrete core subjected to axial compression Shi Cheng , Peng Feng
16:15 – 16:30	Compressive behavior of concrete cylinders confined by steel-BFRP hybrid stirrup (SBHS) Adam Ishag, Gang Wu, Ze-Yang Sun, Zhi-Shen Wu
16:30 – 16:45	Comparative study among FRP-confined concrete stress-strain models for simulating cyclic response of circular RC columns Ahmed M. Ismail, Mohamed F.M. Fahmy and Zhishen Wu
16:45 – 17:00	Axial compressive behavior of circular concrete filled fiber reinforced polymer tube columns Qasim S. Khan, M. Neaz Sheikh, Muhammad N.S. Hadi
17:30 – 19:00	**IIFC ExCom and AdvCom meeting (301, Building One)**
18:00 – 20:00	**Dinner**

Tuesday – 15/12/2015	
8:30 – 9:10	**Keynote Lecture 3 (Huangpu Hall)** **Tamon Ueda** **Chairman: Jinguang Teng**
9:10 – 9:50	**Keynote Lecture 4 (Huangpu Hall)** **Yufei Wu** **Chairman: Scott Smith**
9:50 – 10:10	**Coffee Break**
10:10– 11:40	**Session 4A (Huangpu Hall)** **Capacity strengthening of concrete, metallic, timber and masonry structures / Seismic strengthening / Field applications, case studies** **Chairman: Jialai Wang**
10:10 – 10:25	Electrode potentials deteriorating behavior of CFRP-strengthened steel beams Ibrahim Bumadian, Yail J. Kim, and Yongcheng Ji
10:25 – 10:40	Stochastic investigations into performance quantification for NSM CFRP-strengthened bridge girders Yail J. Kim, Yongcheng Ji, Jae-Yoon Kang, Jong-Sup Park, and Woo-Tai Jung
10:40 – 10:55	Compressive behaviour of short steel column strengthened by carbon fiber sheet Yuya Hidekuma, Takeshi Miyashita, Tatsuya Hama, and Akira Kobayashi
10:55 – 11:10	Experimental and numerical assessment of FRP strengthened precast reinforced concrete wall panels with openings C. Todut, V. Stoian, D. Dan and T. Nagy-György
11:10 – 11:25	Tests on reinforced concrete slabs with openings retrofitted using carbon fibre reinforced polymers Sorin C. Florut, Tamas Nagy-Gyorgy and Valeriu Stoian
11:25 – 11:40	Fiber reinforced grancrete strengthening system Judy M. I. Soliman, Tarek K. Hassan, Amr A. Abdelrahman, Osama Hamdy and Sami H. Rizkalla
10:10 – 11:40	**Session 4B (301, Building One)** **Bond behavior** **Chairman: Dawei Zhang**
10:10 – 10:25	Temperature effect on the bond behavior of basalt FRP-steel single-lap Joints under dynamic tensile loading Mingxia Yao, Huaian Zhang, Yiming Yao, Barzin Mobasher, Deju Zhu
10:25 – 10:40	Experimental study on dynamic behavior of CFRP-to-concrete interface Jingya Liu, Xiaoqing Dai, Jingsi Huo, Jin Yang, Yuan Lu and Yan Xiao
10:40 – 10:55	Double bond shear tests at elevated temperature on NSM FRP system with epoxy and grout adhesive Alessandro Proia, Stijn Matthys, Aniello Palmieri and Christophe Cassaert
10:55 – 11:10	Experimental study on the bond behavior between shear-strengthening FRP and concrete P.Y. Zhou, G.M. Chen, W.N. Liu, Z.H. Tang, B.W. Xie, X.C. Liu and J.F. Chen
11:10 – 11:25	Experimental study of bond between NSM FRP and concrete under fatigue loading Cheng Chen and Lijuan Cheng
11:25 – 11:40	Experimental study on the debonding phenomena of PBO-FRCM strengthening system in flexurally strengthened reinforced concrete beam Boonchai Stitmannaithum, Tamon Ueda and Chanh Thai Minh Tran

10:10– 11:40	**Session 4C (302, Building One)** **All FRP structures/ Hybrid structures** **Chairman: Peng Feng**
10:10– 10:25	The effect of shear span-to-depth ratio on the failure mode and strength of pultruded GFRP beams Majid Muttashar, Warna Karunasena, Allan Manalo, and Weena Lokuge
10:25 – 10:40	Testing and characterization of pultruded glass fiber reinforced polymer (GFRP) beams Majid Muttashar, Warna Karunasena, Allan Manalo and Weena Lokuge
10:40 – 10:55	Development of bridge inspection path using GFRP trussed girder Yoshiyasu Furuya, Hitoshi Nakamura, Hiroshi Nakai, Kousuke Koizumi and Masayuki Nishida
10:55 – 11:10	The structural characteristics on a bridge inspection path using GFRP trussed girder Hitoshi Nakamura, Kousuke Koizumi, Yuya Ishii, Yoshiyasu Furuya, Hiroshi Nakai and Masayuki Nishida
11:10– 11:25	Live load distribution factor of hybrid FRP-UHPC bridge: experimental comparison with CSA S6-06 Donna Chen and Raafat El-Hacha
11:25 – 11:40	Concrete-filled FRP tubes tested in torsion James D. St. Onge and Amir Z. Fam

12:00 – 13:00	**Lunch (Tuesday– 15/12/2015)**
13:15– 15:00	**Session 5A (208, Building One)** **Capacity strengthening of concrete, metallic, timber and masonry structures / Seismic strengthening / Field applications, case studies** **Chairman: Tamon Ueda, Jianguo Dai**
13:15 – 13:30	Strengthening and repair of moment resisting timber joints with FRP composites Jia-qi Yang and Scott T. Smith
13:30 – 13:45	Inverted t-section RC beams shear strengthened with anchored FRP strips: shear interaction G.M. Chen, Z. Zhang, K.H. Huang, D.Q. Liao, J.F. Chen and C.Y. Zhou
13:45 – 14:00	Blast and impact resistance of FRP strengthened concrete structures Xiao-Qin Li and Jian-Fei Chen
14:00 – 14:15	Flexural strengthening RC beams using a composite reinforcement layer: FRP grid and ECC Wen-wei Wang and Yu-zhou Zheng
14:15 – 14:30	Shear strengthening of reinforced concrete T-beams under cyclic loading with TRM or FRP jackets E. Tzoura and T. C. Triantafillou
14:30 – 14:45	Strengthening of steel and hybrid shear walls Natalja Petkune, Ted Donchev, Homa Hadavinia, David Wertheim, Mukesh Limbachiya
14:45 – 15:00	Variation of plastic hinge length of RC column Cheng Jiang and Yu-Fei Wu
13:15 – 15:00	**Session 5B (212, Building One)** **Advanced numerical models and simulations** **Chairman: Alper Ilki, Lijuan Chen**
13:15 – 13:30	Finite element analysis of bond behaviour between CFRP laminates and steel members Alaa Al-Mosawe, Riadh Al-Mahaidi and Xiao-Ling Zhao
13:30 – 13:45	A non-linear finite element model for insulated concrete sandwich panels, part I: static analysis Paul M. Hopkins and An Chen
13:45 – 14:00	A non-linear explicit finite element model for insulated concrete sandwich panels, part II: dynamic analysis Paul M. Hopkins and An Chen
14:00 – 14:15	A new shear strength model for FRP-strengthened RC beam-column joints under seismic loading Guolin Wang
14:15 – 14:30	Models for predicting the axial compressive strength of steel fibre reinforced normal and high strength concrete square columns Emdad K.Z. Balanji, M Neaz. Sheikh and Muhammad N.S. Hadi
14:30 – 14:45	Numerical simulation of CFRP strengthened steel square hollow section (SHS) subject to torsion H.L. Qiang , X.L. Zhao , G. Wu and P. Feng
14:45 – 15:00	Numerical modelling of flexible polymers as the adhesive for FRPs Arkadiusz Kwiecień, Matija Gams and Bogusław Zając

13:15 – 15:00	**Session 5C (301, Building One)** **New FRP materials/systems/techniques** **Chairman: Baolin Wan, Xin Wang**
13:15 – 13:30	GFRP hollow-core rebars for concrete beams Guillermo Claure, Francisco De Caso y Basalo and Antonio Nanni (Presenter: Kuangyi Zhang)
13:30 – 13:45	Compressive behavior of sisal fiber reinforced concrete composite column wrapped by jute FRP Haozhi Tan, Liang Huang, Libo Yan, Yin Wang, Jia-yi Chen and Hang Li
13:45 – 14:00	Structural performance of ballastless track slabs reinforced with BFRP and SFCB: numerical investigation Yang Yang; Gang Wu and Zhi-Shen Wu
14:00 – 14:15	Joining pultruded GFRP tubular components for space latticed shell structures Fu Jia Luo and Yu Bai
14:15 – 14:30	Large scale space frame assembled using pultruded GFRP composites under static loading Xiao Yang, Yu Bai and Faxing Ding
14:30 – 14:45	Mechanical behaviours of pultruded GFRP wall stud to steel beam connections Chao Wu, Yu Bai and Zhujing Zhang
14:45 – 15:00	Bonded sleeve connections for pultruded GFRP tubular members in building construction Zhujing Zhang, Chao Wu, Yu Bai and Pezhman Sharafi
13:15 – 15:00	**Session 5D (302, Building One)** **Structures reinforced or prestressed with FRP systems** **Chairman: Rudolf Seracino, Emmanuel Ferrier**
13:15 – 13:30	Behaviour of GFRP tube reinforced concrete columns under eccentric loading Weiqiang Wang, Ali Q. Al-Baali, M. Neaz Sheikh and Muhammad N. S. Hadi
13:30 – 13:45	Comparison of the shear behaviour of geopolymer concrete beams with GFRP and steel transverse reinforcements Ginghis B. Maranan, Allan C. Manalo, Warna M. Karunasena, Brahim Benmokrane and Priyan A. Mendis
13:45 – 14:00	Size effect on shear strength of GFRP-RC continuous beams without stirrups Karam Mahmoud and Ehab El-Salakawy
14:00 – 14:15	Influence of the degree of prestressing on the behaviour of BFRP reinforced beams M. Mirshekari, T. Donchev, D. Petkova and M. Limbachiya
14:15 – 14:30	Truss analogy and shear-induced deformation of FRP RC beams Fang Yang, Maurizio Guadagnini and Matteo Di Benedetti
14:30 – 14:45	Experimental analysis of deformations and tension-stiffening in concrete beams reinforced with BFRP bar and SFCB Zhiqiang Dong, Gang Wu, and Luc Taerwe
14:45 – 15:00	Evaluation of fire-exposed GFRP-RC slabs Guillermo Claure, Francisco De Caso y Basalo and Antonio Nanni (Presenter: Kuangyi Zhang)
15:00 – 15:15	**Coffee Break**

15:15 – 17:30	**Session 6A (208, Building One)** **Capacity strengthening of concrete, metallic, timber and masonry structures / Seismic strengthening / Field applications, case studies** **Chairman: Riadh Al-Mahaidi, Raafat El-Hacha**
15:15 – 15:30	Compressive characteristics of thin-walled steel cylinder strengthened by CFRP Yukihiro Matsumto, Takahiro Matsui, Hitoshi Nakamura, Akira Tsujioka, Chiaki Hasegawa, Shinichi Matsuura and Yoshihiro Endo
15:30 – 15:45	Seismic elasto-Plastic analysis of RC frame structure with columns confined by CFRP Wei Liu, Yaping Peng and Xuan Zhang
15:45 – 16:00	CFRP strengthened RC beams under combined environmental and mechanical impact Dawei. Zhang, Yuxi. Zhao and Tamon. Ueda
16:00 – 16:15	Performances of FRP confinement models for predicting the behavior of full-scale FRP retrofitted columns under simulated seismic actions Hamid F Ghatte, Mustafa Comert, Cem Demir and Alper Ilki
16:15 – 16:30	Design and construction of large-scale CFRP-based ground anchors in Aizhai bridge Kuangyi Zhang, Zhi Fang and Antonio Nanni
16:30 – 16:45	Performance-based approach for fire resistance design of FRP-strengthened RC beams: a case study Wan-Yang Gao, Jian-Guo Dai and J.G. Teng
16:45 – 17:00	Flexural behavior of RC/PC beams strengthened with prestressed basalt FRP rods Kentaro Iwashita, Yousuke Yagi, Mitsuhide Yoshida, Xin Wang, Takuma Kajiura and Tang Zedong
17:00 – 17:15	Repair of fatigue cracks initiated at out-of-plane welded gusset joints using pre-tensioned CFRP strips Hitoshi Nakamura, Hiroya Itoh, Daisuke Mukaida and Fan Lin
17:15 – 17:30	CFRP strengthened pre-cracked steel plates protected with chemical silane exposed to extreme marine environments Daniel Borrie, Xiao-Ling Zhao RK Singh Raman and Yu Bai
15:15 – 17:15	**Session 6B (212, Building One)** **Advanced numerical models and simulations** **Chairman: Scott T. Smith, Guijun Xian**
15:15 – 15:30	Lattice discrete particle modeling (LDPM) of fiber reinforced polymers (FRP) confined concrete columns C. Ceccato, C. Pellegrino and G.Cusatis
15:30 – 15:45	The novel large-diameter FRP cable anchoring system: 3D finite element analysis Bo Feng, Xin Wang and Zhishen Wu
15:45 – 16:00	Numerical simulation of hysteretic behaviour of hybrid FRP-concrete-steel double-skin tubular columns B. Zhang, T. Yu, J.G. Teng and G. Lin
16:00 – 16:15	Numerical simulation of CFRP strengthened steel plates with edge cracks Q.Q. Yu, X.L. Gu, T. Chen and X.L. Zhao
16:15 – 16:30	Numerical simulation of structural behavior of NSM CFRP strengthened RC beams using finite element analysis Faruk Ortes, Baris Sayin, Tarik Serhat Bozkurt and Cemil Akcay
16:30 – 16:45	How to model the 3D FRP-to-concrete bond behaviour in 2D Feng-Chen An, Jian-Fei Chen, Yi Tao, Xin-Yan Guo and Pankaj Pankaj
16:45– 17:00	Optimal polymer matrix coating for composite railway sleeper – analytic hierarchy process Wahid Ferdous, Allan Manalo, Thiru Aravinthan and Gerard Van Erp

17:00 –17:15	Fiber-based modeling of RC columns retrofitted with NSM reinforcement and external confinement Liuzhen Yao and Gang Wu
15:15 – 17:15	**Session 6C (301, Building One)** **New FRP materials/systems/techniques** **Chairman: Luc Taerwe, Yufei Wu**
15:15 – 15:30	Compressive behavior of concrete wrapped by polyester FRP Xinrui Yang, Liang Huang, Libo Yan and Kai He (Presenter: Haozhi Tan)
15:30 – 15:45	Vibration characteristics of hybrid FRP cable with smart damper Yaqiang Yang, Xin Wang and Zhishen Wu
15:45 – 16:00	Carbon fiber strand sensor for detecting damage on steel structure Takeshi Miyashita, Daiki Matsumoto, Yuya Hidekuma and Akira Kobayashi
16:00 – 16:15	Bamboo fibre reinforced polymers as highly flexible reinforcement of masonry structures in seismic areas Arkadiusz Kwiecień, Dirk E. Hebel, Mateusz Wielopolski, Alireza Javadian, Felix Heisel
16:15 – 16:30	Mechanical behavior of cylindrical GFRP chimney liners subjected to axial compression and tension Shi Cheng Yi Zheng and Peng Feng
16:30 – 16:45	Experimental investigation on PFRP single-lap single-bolt joints Ao Du, Yuqing Liu, Haohui Xin and Yize Zuo
16:45 – 17:00	GFRP-RC slab-column edge connections with GFRP shear studs Mohammed G. El-Gendy and Ehab F. El-Salakawy
17:00– 17:15	Tension and compression testing of FRP bars Qasim S. Khan, M. Neaz Sheikh and Muhammad N.S. Hadi
15:15 – 17:30	**Session 6D (302, Building One)** **Structures reinforced or prestressed with FRP systems** **Chairman: Jianfei Chen, Yu Bai**
15:15 – 15:30	Experimental study on crack width in GFRP RC beams Cristina Barris, Lluís Torres, Irene Vilanova and Marta Baena
15:30 – 15:45	Flexural behavior of cored slabs prestressed with carbon fiber strands Griffith Shapack, Rudolf Seracino, Gregory Lucier, and Sami Rizkalla
15:45 – 16:00	Load-bearing precast concrete sandwich wall panels with basalt-FRP reinforcement and ties Douglas G. Tomlinson and Amir Z. Fam
16:00 – 16:15	Experimental investigation on the behaviour of RC columns with BFRP reinforcement Diana Petkova, Ted Donchev, Nderim Azemi and Spencer Bell
16:15 – 16:30	Strength and ductility behavior of circular concrete columns reinforced with GFRP bars and helices Hogr Karim, Bransen Noel-Gough, M. Neaz Sheikh and Muhammad N. S. Hadi
16:30 – 16:45	Design of concrete frames reinforced by FRP bars Adeline Confrère, Emmanuel Ferrier and Laurent Michel
16:45 – 17:00	Damage-controllable basalt FRP steel reinforced concrete structural system Arafa M. A. Ibrahim, Mohamed F.M. Fahmy and Zhishen Wu
17:00 – 17:15	Textile reinforced mortar system as a means for confinement of masonry structures Krevaikas D. Theofanis
17:15 – 17:30	Durability of CFRP pre-stressed concrete subjected to stress and moisture exposure Shobana Sivanendran and Janet M Lees
18:00 -21:00	**Banquet**

Wednesday 16/12/2015	
8:30 – 9:30	**Session 7 (Huangpu Hall)** **Hybrid structures** **Chairman: Muhammad N.S. Hadi**
8:30 – 8:45	Theoretical study on flexural behavior of GFRP-concrete hybrid beam Huiying Jin, Jize Mao, Shuai Zhang and Qingyong Guo
8:45 – 9:00	Flexural behaviour of a sustainable hybrid composite panel using natural fibres Jauhar Fajrin and Yan Zhuge
9:00– 9:15	Hybrid thin-walled members made of FRP and timber Dilum Fernando, Joseph Gattas, J.G. Teng and Michael Heitzmann
9:15 – 9:30	Experimental and numerical study on flexural performance of hybrid GFRP and concrete bridge deck Yize Zuo, Yuqing Liu and Haohui Xin
9:30 – 9:50	**Coffee break**
9:50 – 10:30	**Keynote Lecture 5 (Huangpu Hall)** **Rudolf Seracino** **Chairman: Luc Taerwe**
10:30 – 11:10	**Keynote Lecture 6 (Huangpu Hall)** **Zhishen Wu** **Chairman: Thanasis Triantafillou**
11:10 – 11:50	**Closing Ceremony**
12:00 – 13:00	**Lunch**
13:00 – 17:00	**Technical tour**
18:00 – 20:00	**Dinner**