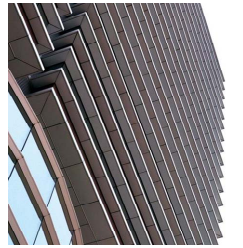
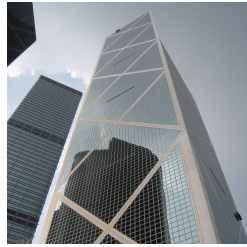


YRGS 2012

The 4th Asia-Pacific Young Researchers & Graduates Symposium
Hong Kong | 4-5 December 2012

Final Program



THE HONG KONG
POLYTECHNIC UNIVERSITY

香港理工大學

Welcome to YRGS-2012

The Asia-Pacific Young Researchers and Graduates Symposium (YRGS) series is primarily a platform for early-stage structural engineering professors, research scientists, professional engineers, postdoctoral fellows and PhD students to present their latest findings within the broad discipline of structural engineering. The symposium features oral presentations predominantly from early-career people but also includes talks from leading figures in the field. It provides an opportunity for young structural engineering people to learn about future career paths and to network with fellow researchers. The previous three YRGSs were successfully held at Kunsan National University in 2009, Zhejiang University in 2010 and National Taiwan University in 2011, respectively.

The 4th Asia-Pacific Young Researchers and Graduates Symposium: The Future of Structural Engineering – Research, Practice and Education (YRGS-2012) has accepted forty seven papers from many countries/regions including Australia, Canada, Mainland China, Hong Kong, India, Japan, Korea, Malaysia, USA, UK, Taiwan, Thailand and Turkey. The Symposium will be held at The Hong Kong Polytechnic University on 4-5 December, 2012. It will consist of a two-day technical program: the first day program will be organized in six technical sessions; and the second day program will be a mini-symposium on “Durability and Life-cycle Management of Civil Infrastructures” jointly organized with the First International Conference on Performance-based and Life-cycle Structural Engineering (PLSE 2012) in Hong Kong. Contributions presented at YRGS-2012 deal with the state of the art as well as emerging concept and technology related to research, practice and education in the field of structural engineering.

On behalf of the YRGS-2012 organizing committee and The Hong Kong Polytechnic University, the chairs of the Symposium would like to cordially welcome all the authors and participants. We also take this opportunity to express our sincere thanks to the financial sponsors—Asian Concrete Federation (ACF), The Hong Kong Institute of Steel Construction (HKIC); to the distinguished keynote lecturers—Prof. Surendra P. Shah and Prof. Tamon Ueda; and to all the members of the advisory committee, scientific committee and steering committee.

We look forward to meeting all of you in Hong Kong. We believe with your contribution and participation, the YRGS-2012 will be a successful event.

Jian-Guo DAI & Songye ZHU
Chairs, YRGS-2012
Department of Civil and Environmental Engineering
The Hong Kong Polytechnic University
Hong Kong, China

Symposium Organization

ORGANIZING ASSOCIATION



CO-ORGANIZER AND SPONSORS



Asian Concrete Federation



Hong Kong Institute of Steel Construction

ADVISORY COMMITTEE

Siu-Lai CHAN	The Hong Kong Polytechnic University
Kwok-fai CHUNG	The Hong Kong Polytechnic University
Mario FANTIN	VicRoads, Australia
Wei-Liang JIN	Zhejiang University, China
Albert K. H. KWAN	Hong Kong University, Hong Kong
Hui LI	Harbin Institute of Technology, China
Jie LI	Tongji University, China
Hilmi MAHMUD	University of Malaya, Malaysia
Satish NAGARAJIAH	Rice University, USA
Gang-Bing SONG	University of Houston, USA
Jin-Guang TENG	The Hong Kong Polytechnic University, Hong Kong
Keh-Chyuan TSAI	National Taiwan University, Taiwan
Tamon UEDA	Hokkaido University, Japan

Zhi-Shen WU	Ibaraki University, Japan
Yan XIAO	Hunan University, China
You-Lin XU	The Hong Kong Polytechnic University, Hong Kong
Xiao-Lin ZHAO	Monash University, Australia

INTERNATIONAL STEERING COMMITTEE

Hwa-kian CHAI	University of Malaya, Malaysia
Sandeep CHAUDHARY	Malaviya National Institute of Technology, India
Jian-Bing CHEN	Tongji University, China
Chung-Che CHOU	National Taiwan University, Taiwan
Jian-Guo DAI	The Hong Kong Polytechnic University, Hong Kong
Dookie KIM	Kunsan National University, Korea
Yew-Chin KOAY	VicRoads, Australia
Yoshikazu KOBAYASHI	Nihon University, Japan
Yu-Xi ZHAO	Zhejiang University, China
Chun-Wei ZHANG	University of Western Sydney, Australia
Songye ZHU	The Hong Kong Polytechnic University, Hong Kong

INTERNATIONAL SCIENTIFIC COMMITTEE

Yu BAI	Monash University, Australia,
An CHEN	University of Idaho, USA,
Wen Hui DUAN	Monash University, Australia
Peng FENG	Tsinghua University, China
Ting Yu HAO	CRICB Co., MCC Group, China
Kent A. HARRIES	Pittsburg University, USA
Shaofei JIANG	Fuzhou University, China
Yail J. KIM	North Dakota State University, USA
A. LENWARI	Chulalongkorn University, Thailand
Bing LI	Nanyang Technological University, Singapore
Kefei LI	Tsinghua University, China
S. LIMKATANYU	Prince of Songkla University, Thailand
Guoxing LU	Nanyang Technological University, Singapore

Xinzheng LU	Tsinghua University, China
K. NAGAI	Tokyo University, Japan
H. SEZEN	Ohio State University, USA
R. SAHAMITMONGKOL	Thammasat University, Thailand
Scott T. SMITH	Hong Kong University, Hong Kong
Baolin WAN	Marquette University, USA
Wenwei WANG	Southeast University, China
Tao WANG	China Earthquake Administration, China
Yang WANG	Georgia Institute of Technology, USA
Yong XIA	The Hong Kong Polytechnic University, China
Guijun XIAN	Harbin Institute of Technology, China
Yiqing XIAO	Harbin Institute of Technology, China
Jian YANG	The University of Birmingham, UK
Zhenjun YANG	University of Manchester, UK
Tao YU	University of Wollongong, Australia

Program Overview

3 December 2012	14:30-17:30	Registration	<i>W703d at HKPolyU</i>
	18:30-20:30	Steering Committee Meeting	<i>W703d at HKPolyU</i>

4 December 2012	08:00-09:00	Registration	<i>Y520 at HKPolyU</i>
	09:00-09:20	Opening Ceremony	<i>Y520 at HKPolyU</i>
	09:20-09:50	Keynote Lecture I	<i>Y520 at HKPolyU</i>
	09:50-10:20	Keynote Lecture II	<i>Y520 at HKPolyU</i>
	10:20-12:20	Two parallel sessions Session 1 Session 2	<i>Y520 at HKPolyU</i> <i>Y511 at HKPolyU</i>
	12:20-14:00	Lunch <i>at Four Seas Restaurant, S Core, HKPolyU</i>	
	14:00-15:40	Two parallel sessions Session 3 Session 4	<i>Y520 at HKPolyU</i> <i>Y613 at HKPolyU</i>
	15:40-16:00	Coffee Break	
	16:00-18:00	Two parallel sessions Session 5 Session 6	<i>Y520 at HKPolyU</i> <i>Y613 at HKPolyU</i>
18:30-20:30	Banquet <i>at SaiKung, N.T.</i> (A shuttle bus to the venue will be arranged)		

5 December 2012	10:50-12:10	YRGS Mini-symposium in PLSE2012: Session 1D	Longchamps I Room, Regal Kowloon Hotel
	12:10-13:30	Lunch <i>at Four Seas Restaurant, S Core, HKPolyU</i>	
	13:30-15:10	YRGS Mini-symposium in PLSE2012: Session 2D	Longchamps I Room, Regal Kowloon Hotel
	15:30-17:30	YRGS Mini-symposium in PLSE2012: Session 3D	Longchamps I Room, Regal Kowloon Hotel
	13:30-17:00	Hong Kong Bridge Tour (A shuttle bus to the venue will be arranged)	
	17:30-18:30	Closing ceremony	Regal Kowloon Hotel

Distinguished Keynote Lecturer



Prof. Surendra P. Shah
Northwestern University
Chicago, USA

Advanced materials through nanotechnology

Biography

Surendra P. Shah is a Walter P. Murphy Professor of Civil Engineering at Northwestern University. He is the Director of the pioneering NSF Science and Technology Center for Advanced Cement-Based Materials. His current research interests include: fracture, fiber reinforced composites, non-destructive evaluation, transport properties, processing, rheology, nanotechnology, and use of solid waste materials. He has co-authored two books: Fiber-Reinforced Cement-Based Composites and Fracture Mechanics of Concrete. He has published more than 400 journal articles and edited more than twenty books. He has served as editor-in-chief of RILEM's journal Materials and Structures.

Professor Shah is a Member of the US National Academy of Engineering. He is also a Foreign Member of the Chinese Academy of Engineering, as well as of the Indian Academy of Engineering. He is the only civil engineer who is a member of these three academies. He has received many awards including the Swedish Concrete Award, ACI Anderson Award, RILEM Gold Medal, ASTM Thompson Award, ASCE Charles Pankow Award, and Engineering News Record's News Maker Award. He was named one of the Most Influential People in the industry by Concrete Construction Magazine. He spent time recently as an Honorary Professor at the Indian Institute of Technology, Bombay under a Fulbright grant. Most recently, he was awarded an honorary membership in American Concrete Institute and RILEM (based in Paris).

Besides teaching at Northwestern University, Professor Shah has taught at the University of Illinois at Chicago and served as a visiting professor at MIT, University of Sydney, Denmark Technical University, University of Singapore, Darmstadt Technical University, and LCPC, Paris. He is currently an honorary professor at the Hong Kong Polytechnic University and L'Aquila University in Italy.

Distinguished Keynote Lecturer



Prof. Tamon UEDA
Hokkaido University
Sapporo, Japan

Expectation to young researchers and graduates in Asia-Pacific for our future

Biography

UEDA Tamon is a Professor at Division of Engineering and Policy for Sustainable Environment of Hokkaido University. He obtained his Doctor of Engineering from University of Tokyo in 1982. His research interests are in numerical analysis of concrete and hybrid structures, prediction of life cycle of structures, upgrading of structures, seismic design and structural design methodology. He has received various national and international awards on his research achievements, such as JSCE Awards, JCI Awards, JPCI Awards, and Awards from international journals (ASCE JCC, Advances in Structural Engineering, Advanced Concrete Technology). He is currently Technical Council Member of the International Federation for Structural Concrete (fib), Advisory Committee Member of International Institute of FRP in Construction (IIFC), President of Asian Concrete Federation (ACF), Former Chairman of International Committee on Concrete Model Code for Asia (ICCMC), Chairman of ISO/TC71/SC7 (Maintenance and Repair of Concrete Structures), Chairman of Concrete Committee of Hokkaido Civil Engineering Association, and Board member and Senior Director of International Activities Center of JSCE.

Program in Details

Monday, 3 December 2012

14:30-17:30	Registration (W703d, W core, HKPolyU)
18:30-20:30	Steering Committee Meeting (W703d, W core, HKPolyU)

Tuesday, 4 December 2012

08:00-09:00	Registration
09:00-09:20	Opening Ceremony (Y520, Y core, HKPolyU)
09:20-09:50	Keynote Lecture I (Y520, Y core, HKPolyU) Chair: Jian-Guo Dai
	<i>Surendra P. Shah</i> , Northwestern University Title: Advanced materials through nanotechnology
09:50-10:20	Keynote Lecture II (Y520, Y core, HKPolyU) Chair: Songye Zhu
	<i>Tamon Ueda</i> , Hokkaido University Title: Expectation to young researchers and graduates in Asia-Pacific for our future
10:20-12:20	Session 1 (Y520, Y core, HKPolyU) Chair: J.B. Chen
	<i>T.Y. Yang and D.P. Tung.</i> Performance-based plastic design of linked column frames
	<i>N. Wang, J.S. Huo and J.Q. Zhang.</i> Experimental and numerical study on the dynamic behaviours of axially restrained steel beams under impact load
	<i>C.L. Wang, Q. Chen, T. Li, S.P. Meng and H.B. Ge.</i> Evaluating the effect of unbonding material for all-steel BRBs
	<i>R.J. Liang, J. Wu and S.P. Meng.</i> Verification on the inaccuracy of the equivalent-damping-ratio based capacity spectrum method
	<i>W.S. Shyu, M.H. Tsai, J.K. Lu and P.J. Shih.</i> Response of SDOF systems located

	<p>near and on elliptical alluvial basins under incident plane SH waves in frequency domain</p> <p><i>S.R. Yuan, J.B. Chen and J. Li.</i> Dimension reduction of FPK equation and its applications in seismic response of structures</p>
10:20-12:20	<p>Session 2 (Y511, Y core, HKPolyU) Chair: H.K. Chai</p> <p><i>Yasser Bigdeli and Dookie Kim.</i> Active response control of 3D irregular building using neuro-controller</p> <p><i>H.K. Chai HK, M. Yorikawa, S. Momoki and M. Terazawa.</i> Damage Assessment of fiber-reinforced concrete beams by stress wave velocity distribution</p> <p><i>J. Li and H. Hao.</i> Dynamic condition assessment of shear connectors in composite bridges under ambient vibration</p> <p><i>Siu Chun Michael Ho and Gangbing Song.</i> Fiber bragg grating sensor network for the structural health monitoring of a medium scale grout structure</p> <p><i>C. Chang, Alamusi, N. Hu and Gangbing Song.</i> Temperature effect on electrical resistivity of MWCNT-epoxy thick film nanocomposites</p> <p><i>J.Z. Su, Y. Xia, L. Chen, X. Zhao, Q.L. Zhang and Y.L. Xu.</i> Performance monitoring of the tallest building in China</p>
12:20-14:00	<p>Lunch (Four Seas Restaurant, S Core, HKPolyU)</p>
14:00-15:40	<p>Session 3 (Y520, Y core, HKPolyU) Chair: K. Nagai</p> <p><i>Dawei Zhang, Tamon Ueda and Hitoshi Furuuchi.</i> Average crack spacing of overlay-strengthened RC beams</p> <p><i>H. Onishi.</i> A mechanical behaviour of RC members overlaid with MMA concrete</p> <p><i>A.Y. Jiang, J. Chen and W.L. Jin.</i> Experimental investigation and design of concrete-filled cold-formed thin-walled steel tubes subject to bending</p> <p><i>R.K. Gupta, K.A. Patel, S. Chaudhary and A.K. Nagpal.</i> An efficient finite element model for flexible composite structures</p> <p><i>R.K. Sharma and P. Chowdhary.</i> Effect of relative humidity on creep-shrinkage behaviour of composite frame systems</p>
14:00-15:40	<p>Session 4 (Y613, Y core, HKPolyU) Chair: D.W. Zhang</p> <p><i>Kohei Nagai and Daisuke Hayashi.</i> An analytical investigation of anchorage performance of mechanical anchorage by 3D discrete model</p> <p><i>Caglar Goksu, Pinar Inci and Alper Ilki.</i> The bond-slip behaviour of extremely low</p>

	<p>strength RC columns with corroded plain reinforcing bars</p> <p><i>W. Soonjun, D. Yodmalai, R. Sahamitmongkol, S. Tangtermsirikul.</i> Improvement of resistance against carbonation and chloride penetration of concrete by crystalline coating material</p> <p><i>Zuanfeng Pan and Zhitao Lu.</i> Sensitivity analysis of time-dependent deflection in long-span prestressed concrete continuous bridges</p> <p><i>L.C. Wang and S.H. Li.</i> Capillary absorption of concrete after subjected to mechanical loading</p>
15:40-16:00	Coffee Break
16:00-18:00	<p>Session 5 (Y520, Y core, HKPolyU) Chair: Y.C. Koay</p> <p><i>X. Wang, W.W. Wang, J.G. Dai and F. Zhao.</i> FE analysis of GFRP-concrete composite bridge decks using a mixed element approach</p> <p><i>D. Fernando, T. Yu and J.G. Teng.</i> Behaviour of CFRP laminates bonded to a steel substrate using a ductile adhesive</p> <p><i>Y.L. Wang, Y.Y. Li and J.H. Ran.</i> Structural performance of hybrid FRP-concrete beam</p> <p><i>H. Sezen.</i> Retrofit of reinforced concrete beam-column joints and columns using fiber reinforced polymer</p> <p><i>Yu Jia Huan and Yang Li.</i> Experimental study on FRP reinforced PP ECC beams under reverse cyclic loading</p> <p><i>Yu Jia Huan and Yang Li.</i> Application of interfacial propagation and kinking crack concept to ECC/concrete overlay repair system</p>
16:00-18:00	<p>Session 6 (Y613, Y core, HKPolyU) Chair: H. Sezen</p> <p><i>Jianfeng Dong, Yuxi Zhao, Yingyao Wu, Liang Ye.</i> Experimental study on corrosion process of steel bar in recycled concrete</p> <p><i>Y.C. Koay.</i> Concrete made with geopolymers: an alternative cement reducing the carbon dioxide emissions-the VicRoads experience</p> <p><i>H.L. Su, J. Yang, M. Waterhouse, I. McNicholas and J.T. Kang.</i> Properties of concrete with recycled rubber material</p> <p><i>Wit Rattanachot, Yuhong Wang, Dan Chong and Xueying Li.</i> Method of incorporating flood effects into flexible pavement structural analysis</p> <p><i>W.Q. Wu, X.Y. Ma and S. Chen.</i> Feasibility study of bamboo strip plywood used in structure engineering on the basis of its compressive mechanical properties</p> <p><i>S. Zhu, X. Shi, R. Leung, S. Ng and L. Cheng.</i> The effect of construction induced vibration on sensitive medical equipment: a case study</p>

18:30-20:30	Banquet	(Sai Kung, N.T. Around 40-min drive from HKPolyU. A shuttle bus to the venue will be arranged.)
-------------	---------	---

Wednesday, 5 December 2012

9:50-12:10	YRGS Mini-symposium in PLSE2012 Conference: Session 1D (Longchamps I Room, Regal Kowloon Hotel) Chairs: Jian-Guo Dai & Songye Zhu	
	<p><i>T. Ueda.</i> Meso-scale approach for service life prediction of concrete structures under combined effects (Invited Paper)</p> <p><i>F. Gong, E. Sicat and T. Ueda.</i> Mesoscopic deterioration model for mortar under freezing and thawing cycles.</p> <p><i>An Duan and Jian-Gauo Dai.</i> A probabilistic approach for durability design of concrete structures in marine environments</p> <p><i>X.P. Zhong, W.L. Jin, Y. Wang and L. Huang.</i> Life-cycle performance and its indexes of concrete structures</p>	
12:10-13:30	Lunch	(Four Seas Restaurant, S Core, HKPolyU)
13:30-15:10	YRGS Mini-symposium in PLSE2012 Conference: Session 2D (Longchamps I Room, Regal Kowloon Hotel) Chairs: Jian-Guo Dai & Yoshikazu Kobayashi	
	<p><i>F.X. Jiang, F.H. Wittmann and T.J. Zhao.</i> Influence of sustained compressive load on penetration of chloride ions into neat and water repellent concrete (Invited Paper)</p> <p><i>Yuxi Zhao, Hongwei Lin, Kang Wu and Weiliang Jin.</i> Bond-slip relationship between normal/recycled concrete and corroded steel bars</p> <p><i>Dujian Zou, Tiejun Liu and Guofu Qiao.</i> Experimental investigation on the dynamic properties of RC structures affected by reinforcement corrosion</p> <p><i>X.X. Chen, Z.H. Li, Z.Z. Hu and Z.P. Shen.</i> Key technical research and platform development of bridge management system</p> <p><i>Ye Qian, Dawei Zhang and Tamon Ueda.</i> Interfacial bonding of concrete-ordinary Portland cement mortar under freezing thawing cycles</p>	
15:30-17:30	YRGS Mini-symposium in PLSE2012 Conference: Session 3D (Longchamps I Room, Regal Kowloon Hotel) Chairs: Jian-Guo Dai & Sandeep Chaudhary	
	<i>Chung-Che Chou, Ying-Chuan Chen, Dinh-Hai Pham and Vu-Minh Truong.</i>	

Seismic performance and durability assessment of a new steel dual-core self-centering brace with FRP composite tendons

H.W. Huang, Y.S. Sun and J.N. Yang. Damage identification of a cable-stayed bridge model using sequential nonlinear LSE approach

Y. Kobayashi and T. Shiotani. System identification with the Kalman filter in ray-trace based AE-tomography

K.F. Chung and M.H. Shen. Shear resistances of shear connections with composite slabs using headed studs and local aggregates in Hong Kong.

Xueqing Zhang and Hui Gao. A continuous-time semi-Markov model for road maintenance optimization

13:30-17:00 Hong Kong Bridge Tour (A shuttle bus to the venue will be arranged)

17:30-18:00 Closing Ceremony (Longchamps I Room, Regal Kowloon Hotel)

Symposium Venue

- ✓ The YRGS-2012 parallel sessions on 4 December 2012 will be held on the campus of The Hong Kong Polytechnic University (HKPolyU);
- ✓ The mini-symposium on 5 December will be held in Regal Kowloon Hotel, the venue of PLSE 2012 conference.

Around 8 mins walk from HKPolyU to Regal Kowloon Hotel

Transportation from Hong Kong International Airport to HKPolyU or nearby hotels:

By Taxi: Cost about HK\$ 230

By MTR: Take the MTR and get off at the terminus Hung Hom Station
MTR System Map
<http://www.mtr.com.hk/jplanner/images/maps/routemap.pdf>

By Shuttle Bus Many hotels provide shuttle bus service from Hong Kong International Airport. Please check with the hotel when you make your reservation

Map of East Tsim Sha Tsui



Regal Kowloon Hotel
(PLSE 2012 conference)



To Regal Kowloon Hotel

Accommodation

Hotels may provide shuttle bus from/to Hong Kong International Airport

1) Regal Kowloon Hotel

Address: 71 Mody Road, Tsimshatsui, Kowloon ,
Hong Kong

Website : www.regalhotel.com

Phone: (852) 2313 8637

Fax: (852) 2311 8900

Email: rkh.mice@regalhotel.com



2) Harbour Plaza Metropolis

Address: 7 Metropolis Drive, Hunghom, Kowloon,
Hong Kong

Website : www.harbour-plaza.com/hpme

Phone: (852) 3160 6890

Fax: (852) 3160 6988 / (852) 3160 6989

Email: RayN@harbour-plaza.com



3) Hotel ICON

Address: 17 Science Museum Road, Tsim Sha Tsui
East, Kowloon, Hong Kong

Website : www.hotel-icon.com

Phone: (852) 3400 1688

Fax: (852) 3400 1689

Email: book@hotel-icon.com



4) InterContinental Grand Stanford Hotel

Address: 70 Mody Road, Tsimshatsui East, Kowloon, HK.

Website : www.hongkong.intercontinental.com

Tel: (852) 2731 2882

Fax: (852) 2723 5121

Email: reservation@grandstandford.com



5) Holiday Inn Golden Mile Hong Kong

Address: 50 Nathan Road, Tsim Sha Tsui, Kowloon, Hong Kong

Website: www.holidayinn.com/hongkong-gldn

Direct: (852) 2315 1234

Fax: (852) 2723 1957

Email: Meris.lam@goldenmile.com



6) BP International

Address: No.8 Austin Road, Tsim Sha Tsui, Kowloon, Hong Kong.

Website : www.bpih.com.hk

Tel: (852) 2376 3335

Fax: (852) 2376 1333

Email: ivywong@bpih.com.hk



Useful Links

Hong Kong Tourism Board

Please visit the website of the Hong Kong Tourism Board to find more details of attractions, shopping, dining, etc. <http://www.discoverhongkong.com/eng/index.html>

Weather

Please visit the website of Hong Kong Observatory to find the latest weather forecast of Hong Kong. <http://www.hko.gov.hk/contente.htm>

Contacts

Symposium Secretary

Ms. Dilys NG
Department of Civil and Environmental Engineering
The Hong Kong Polytechnic University
Email: cewmng@inet.polyu.edu.hk
Tel: +852-34003965
Fax: +852 23346389

Symposium Chairs:

Dr. Jian-Guo DAI
Department of Civil and Environmental Engineering
The Hong Kong Polytechnic University
Email: cejgdai@polyu.edu.hk
Tel: +852-27666026
&

Dr. Songye ZHU
Department of Civil and Environmental Engineering
The Hong Kong Polytechnic University
Email: ceszhu@polyu.edu.hk
Tel: +852-34003964