

WESTERN SYDNEY
UNIVERSITY



Centre for Infrastructure Engineering

2016 ANNUAL CONFERENCE
EMERGING TRENDS IN INFRASTRUCTURE ENGINEERING

Centre for Infrastructure Engineering

The Centre for Infrastructure Engineering (CIE) is a world-class facility at the leading edge of Infrastructure Engineering within the School of Computing, Engineering and Mathematics at Western Sydney University.

CIE focuses on the analysis, design, testing, maintenance and rehabilitation of hard infrastructure through three research themes.

MATERIALS

Research covers the development, application, characterisation, recycling, remediation, disposal, modelling and monitoring of engineering materials as part of infrastructure design, development and management.

STRUCTURES

Research aims to develop structural systems that are more efficient and economical to construct, more durable and adoptable over their life-cycle, and more resistant to natural or man-made hazards.

SUSTAINABILITY

Research aims to reduce the demands on resources and develop strategies to reduce, treat and dispose/recycle waste products, and to devise solutions to minimise the impact of natural hazards on infrastructure.

Consultation

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HIGHLY SPECIALISED EXPERTS

Staff at CIE are leading academics at the forefront of research in the fields of civil, structural and mechanical engineering. Collaboration with Industry and access to world class testing facilities allows our staff to maintain their high level of research and expertise.

POSTGRADUATE STUDY

CIE attracts high achieving Higher Degree Research students who wish to specialise in fields related to Infrastructure Engineering, providing them with a supportive and successful intellectual environment in which to excel. CIE offers students the opportunity to work on real world projects funded by the Australian Research Council (ARC) and/or industry, with many of the projects helping to inform future Australian Standards in Infrastructure Engineering.

ADVANCED RESEARCH FACILITIES

The Structural Research and Testing Laboratory at CIE is one of the best testing and research facilities in Australia. The facility has held NATA accreditation No. 14711 since 2003 and complies with ISO/IEC 17025:2005 for providing Mechanical Testing Services.



Elevated Temperature Test Rig
(Up to 900°C, 200 tonne)



Hongshan 1000 tonne Multipurpose
Testing Machine



Strong Floor 8m x16m and associated
Testing Rigs

2016 CIE Conference Program

TIME	DURATION	DESCRIPTION
8.30 - 9.10am	40 min	Arrival/Registration <i>Tea and Coffee available</i>
9.15 - 9.25am	10 min	Welcome Professor Bijan Samali, Director, Centre for Infrastructure Engineering, Western Sydney University
9.25 - 9.35am	10 min	Opening Comments Professor Simeon Simoff, Dean, School Computing, Engineering and Mathematics, Western Sydney University
SESSION 1 Theme: Emerging trends in Sustainability Chaired by Professor Bijan Samali		
9.35 - 10.15am	40 min	Keynote Speaker: Mr Aladin Niazmand, TAHPI Topic: Design and procurement at an industrial scale- International Healthcare Sector Case Studies from TAHPI
10.15 - 10.35am	20 min	Speaker: Professor Kenny Kwok, Centre for Infrastructure Engineering, Western Sydney University Topic: Emerging Trends in Sustainability,
10.35 - 10.55am	20 min	Speaker: Dr Fred Moshiri, Timber Development Association (TDA) Topic: Latest developments in Australian Timber Industry,
10.55 - 11.25am	30 min	Morning Tea
SESSION 2 Theme: Emerging trends in Materials Chaired by Professor Bijan Samali		
11.30 - 12.10pm	40 min	Keynote Speaker: Professor John Yeaman, University of the Sunshine Coast Topic: Weipa to Melbourne in 24 Hours by Road – A case for Innovation
12.10 - 12.30pm	20 min	Speaker: Professor Zhong Tao, Centre for Infrastructure Engineering, Western Sydney University Topic: Emerging Trends in Materials,
12.30 - 12.50pm	20 min	Speaker: Dr Richard Wuhler, Western Sydney University Topic: Characterisation of Engineering Materials in the AMC Facility
12.50 - 1.50pm	60 min	Lunch
SESSION 3 Theme: Emerging trends in Structures Chaired by Professor Bijan Samali		
1.55 - 2.35pm	40 min	Keynote Speaker: Professor Kourosh Kayvani, Aurecon Topic: Innovative Solutions for Tall Buildings
2.35 - 2.55pm	20 min	Speaker: Professor Hamid Ronagh, Centre for Infrastructure Engineering, Western Sydney University Topic: Emerging Trends in Structures
2.55 - 3.15pm	20 min	Speaker: Dr Ahmad Firouzianhaji, Dexion Australia Topic: Optimization of Steel Storage Rack Systems
3.15 - 3.35pm	20 min	Speaker: Mr Lance Rogers, SRG Limited Topic: An Innovative Solution for Temporary Movement Joints in Post Tensioned Concrete
3.35pm - 4.05pm	30 min	Afternoon Tea
SESSION 4 Theme: General Chaired by Professor Bijan Samali		
4.10 - 4.30pm	20 min	Keynote Speaker: A/Professor Sergiy Kharkivskiy, Centre for Infrastructure Engineering, Western Sydney University Topic: Development and Application of Sensor Technologies for Infrastructure Health Monitoring
4.30 - 4.50pm	20 min	Speaker: Professor Subhas Mukhopadhyay, Macquarie University Topic: IoT and WSN Based Home and Health Management
4.50 - 5.10pm	20 min	Speaker: Mr Gavin Dawson and Mr Boris Kazakevich, Moog Australia Topic: Custom Engineered Control & Hardware Solutions for Demanding Material Test Applications
5.10pm - 5.20pm	10 min	Short address by Western Sydney University, Research Engagement, Development and Innovation (REDI) office representative
5.20pm - 5.30pm	10 min	Conference closing and acknowledgements, Professor Bijan Samali
5.30pm		Conference closed

2016 Keynote Speakers

Mr Aladin Niazmand

DIRECTOR, TAHPI PTY LIMITED
DIRECTOR, HEALTH PROJECTS
INTERNATIONAL (HPI)
CEO, KEF-TAHPI DESIGN STUDIO

**Presentation Topic:
Design and procurement
at an industrial scale –**

**International Healthcare
Sector Case Studies
from TAHPI**

Aladin Niazmand is a Director of Health Projects International (HPI) and its international network (TAHPI) Specialist Health Facility Planners which operate internationally from 10 offices from Australia to Dubai with over 250 staff.



Aladin has personally briefed & designed over 150 hospital projects in a wide range of disciplines, both public and private. He has had a large influence and input into the creation of the new generation of official Health Facility Guidelines in several countries from Australia to the UAE. He is also responsible for the publication of the free International Health Facility Guidelines (IHFG).

Aladin is the Development Director for the web based software platform known as the 'Health Facility Briefing System' (HFBS), widely used by Health Design Professionals around the world for the rapid scoping and creation of standards-based health facility briefs, room data sheets, equipment schedules, capital and recurrent costing, asset audits and asset tracking.

Aladin now spends a great deal of his time coordinating and customizing various Health Design Guidelines as well as the HFBS platform for different regions of the world including several countries of Asia and the Middle East.

Aladin has been a speaker at numerous health conferences and gives Master Classes in Health Planning. He remains a hands-on professional and is currently responsible for the design of 6 hospital projects in 4 countries with a total value of over \$2bn. These include 3 major projects in Malaysia.

Aladin was largely responsible for HPI and TAHPI winning the Australian State and National Export Awards, 2011 & 2014, the Hospital Build Award in Dubai, 2012 as well as the Health Techon Challenge Award for Most Innovative Idea & Technology, 2016.

2016 Keynote Speakers

Professor John Yeaman

PHD NSW, FTSE, FIE (AUST.), CPENG RPEQ

Presentation Topic: Weipa to Melbourne in 24 Hours by Road- A case for Innovation

John Yeaman has over 50 years of experience in assisting road organisations and governments across the world in the management of their road networks. His main fields of expertise include design, implementation and operation of road management information systems, assistance of road authorities in planning and programming road maintenance and improvement programs under constrained budget situations. John has occupied the position of director, deputy team leader or team leader on several internationally recognised projects as well as occupying key expert positions in multi-disciplinary teams.

John has recently been appointed to an endowed Chair – The Department of Transport and Main Roads (DTMR) Professor of Pavement Engineering for a two-year period. His objective is to make the University of the Sunshine Coast the University of choice for students who wish to study design, construction, operation, maintenance and renewal of roads, runways, and hard standing.



Professor Kourosh Kayvani

BSC TEH., MENGSC PHD UNSW, FIEAUST,
CPENG, MIABSE
GLOBAL DIRECTOR OF EXCELLENCE
& EXPERTISE, AURECON

Presentation Topic: Innovative Solutions for Tall Buildings

Professor Kourosh Kayvani is the Global Director of Excellence & Expertise at Aurecon.

With a career spanning over 25 years, Kourosh has played key roles in the design and delivery of many innovative, complex and award winning projects across the globe. His project portfolio includes Wembley Stadium in London, Sydney Olympics Hockey Stadium, Melbourne Star Observation Wheel, and Liberty Place and 5 Martin Place in Sydney, to name a few among many.

Kourosh is the Laureate of the IABSE Prize awarded by the International Association for Bridge and Structural Engineering for his contribution to design of long span structures world-wide. He was also named one of the Top 100 most influential engineers by Engineers Australia in 2009.



Kourosh professional affiliations include:

- Honorary Professor, School of Civil Engineering, University of Sydney
- Fellow, Engineers Australia
- Editor-in-Chief, Case Studies in Structural Engineering, an Elsevier journal
www.journals.elsevier.com/case-studies-in-structural-engineering
- Director, Australian Steel Institute
- President, Lightweight Structures Association of Australasia

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