4th International Conference on Steel & Composite Structures

Wednesday 21 - Friday 23 July 2010

Powerhouse Museum, Sydney

Wednesday 21 July 2010			
8:00am	Registration Opens		
	Plenary Session 1 *Chairs: Professors Brian Uy & Dennis Lam* Room: Coles Theatre		
9:00am - 9:15am	**Conference Opening** *Professor Andrew Cheetham, Pro Vice Chancellor (Research), UWS*		
9:15am - 9:45am	**Resisting Progressive Collapse by the Use of Tying Resistance** *Professor David Nethercot, Imperial College London*		
9:45am - 10:15am	**The Use of Eurocode 3 in the Design of Steel Structures and Developments Towards the Application of High Performance Steel** *Professor Frans Bijlaard, Delft University of Technology*		
10:15am - 10:45am	Morning Tea		
	Composite Construction *Chair: Professor Lin-Hai Han* Room: Coles Theatre	**Steel Structures** *Chair: Professor Mahen Mahendran* Room: Target Theatre	**Bridge Structures** *Chair: ProfessorTakashi Hara* Room: Learning Centre A
10:45am - 11:05am	**Shear Connections and Their Classification for Shallow Floor Composite Beams** *Matti V. Leskela, University of OULU*	**Behaviour of combined angle/channel connections under monotonic and cyclic loads** *Ahmed Elghazouli, Imperial College London*	**Safety Assessment of Steel-Concrete Composite Girders Through Nonlinear Probabilistic Analysis** *Alessandro Zona, University of Camerino*
11:05am - 11:25am	**A Parametric Study of Shear Connectors in Steel and Concrete Composite Girders** *Pedro Vellasco, State University of Rio De Janeiro*	**Openings in Sandwich Elements** *Felicitas Rädel, University of Technology*	**Temperature Monitoring of Steel Box Girders** *Hans De Backer, Universiteit Gent*
11:25am - 11:45am	**Pure bending test on concrete filled steel tube with built-in reinforcements (CFTR) column joint** *Qiao Qiyun, Kyushu University*	**The Behaviour of Cold-Formed Steel Anchor Plate Subjected to Pure Axial Tension Force** *Adeline Ng, EcoSteel Sdn. Bhd.*	**Soil-structure interaction of composite bridges with integral abutments** *Daniel Pak, RWTH Aachen University*
11:45am - 12:05pm	**Punching Shear Resistance of Composite Slabs with Profiled Steel Sheeting: Experimental Tests and Numerical Simulation** *Luis Calado, Instituto Superior Tecnico - DECivil*	**Cyclic Testing of Tubular Steel Braces with CFRP Reinforced Net Sections** *Cem Haydaroglu, Istanbul Technical University*	**Composite timber bridge deck with steel shear connectors** *Constantine Adam, Monash University*
12:05pm - 12:25pm	**Study of Concrete Filled Tubular Columns Using Finite Element Analysis** *Pramod Gupta, IIT Roorkee*	**Construction and Design of Underground Steel Tanks in Seismic Areas: An Integrated Structural and Geotechnical Approach** *Luigi Di Sarno, University of Sannio*	**An Experimental Study on the Longitudinal Shear Resistance of flat-type composite slab** *Meng Wang, Tsinghua University*
12:25pm - 1:25pm	Lunch		
	Plenary Session 2 *Chair: Professor Eiki Yamaguchi* Room: Coles Theatre		
1:25pm - 1:55pm	**Ultra-High Strength Concrete Filled Columns for Highrise Buildings** *Professor Richard Liew, National University of Singapore*		

	Composite Construction *Chair: Professor Zhong Tao* Room: Coles Theatre	**Steel Structures** *Chair: Professor Dinar Camotim* Room: Target Theatre	**Building Structures** *Chair:Professor Ahmed Elghazouli* Room: Learning Centre A
1:55pm - 2:15pm	**Experimental Behaviour of RC Shear Walls Framed with Steel Reinforced Concrete (SRC) Columns Under Cyclic Loading** *Fei-Yu Liao, Tsinghua University*	**Analysis of Steel Plate Shear Walls** *Fidelis Mashiri, University of Western Sydney*	**Finite Element Response Sensitivity Analysis of Steel Frames Equipped with Buckling-Restrained Braces** *Alessandro Zona, University of Camerino*
2:15pm - 2:35pm	**Structural Behaviour of Composite Concrete-Steel Slabs** *Cronje Bruwer, University of Johannesburg*	**Blind Bolted Collar Plate Connections to Unfilled Hollow Section Columns** *Jessey Lee, University of Melbourne*	**Numerical and Analytical Study of Behavior of Axially Loaded Steel Columns Subjected to Transverse Impact** *Yong Wang, University of Manchester*
2:35pm - 2:55pm	**In situ tests on steel deck concrete composite slabs at Zurich International Airport** *Markus Knobloch, ETH Zürich*	**Web crippling of aluminium Alloy Square Hollow Sections** *Ben Young, The University of Hong Kong*	**A Macro-Model for Beam-To-Column Connections in Steel-Concrete Composite Frames** *Claudio Amadio, University of Trieste*
2:55pm - 3:15pm	**An Experimental Study on Full Size Continuous Composite Slabs with Profiled Sheeting Up to the Ultimate Condition** *Kivanc Taskin, Istanbul Technical University*	**Numerical modelling of Endplate Beam-To-Column Joints Under Bending and Axial Force** *Luciano Lima, State University of Rio De Janeiro*	**Behaviour of Interior CFST Column to Steel Beam Joints with RC Slab Under Cyclic Loading** *Wei Li, Tsinghua University*
3:15pm - 3:35pm	**Seismic Behaviour of Steel Tube-Reinforced Concrete Composite Walls** *Xiaodong Ji, Tsinghua University*	**CS-ASA: A Computational System for Advanced Static and Dynamic Analysis of Steel Framed Structures** *Ricardo Silveira, Federal University of Ouro Preto*	**Load-bearing capacity of perforated trapezoidal sheeting** *Thomas Misiek, Karlsruhe Institute of Technology*
3:35pm - 4:05pm	Afternoon Tea		
	Composite Construction *Chair: Professor Luis Calado* Room: Coles Theatre	**Steel Structures** *Chair: Professor Ben Young* Room: Target Theatre	**Structural Health Monitoring** *Chair: Dr Grace Yan* Room: Learning Centre A
4:05pm - 4:25pm	**Behaviour of planar semi-rigid frames with concrete-filled steel tubular columns and steel beams** *Zhong Tao, University of Western Sydney*	**Stress intensity factors for a wide range of long-deep circumferential semi-elliptical internal surface cracks in tubular members** *Yang Yang, University of Macau*	**Damage Spectral Element for Condition Assessment of One-dimensional Waveguides** *Ying Wang, The University of Western Australia*
4:25pm - 4:45pm	**Finite Element Analysis of Hysteretic Behavior of Gangue Concrete-Filled Steel Tubular Beam-Columns** *Guochang Li, Shenyang Jianzhu University*	**Punching Shear Strength on Edge Columns of Energy Dissipation Structural Walls (EDSWs)** *Nasruddin Junus, Kyushu University*	**Underwater Pipeline Condition Monitoring Based on Ambient Vibration Measurement** *Xuelin Peng, The University of Western Australia*
4:45pm - 5:05pm	**Behaviour and Modelling of tubular steel column-to-RC flat slab assemblages** *Ahmed Elghazouli, Imperial College London*	**Fracture Failure Prediction and Seismic Performance Evaluation of Buckling Restrained Braces** *Heui-Yung Chang, National University of Kaohsiung*	**An Experimental Study of Pipeline Bedding Conditions Using Vibration-Based Method** *Xuelin Peng, The University of Western Australia*
5:05pm - 5:25pm	**Numerical Modelling and Parametric Study of Bolted End-Plate Composite Beam-To-Column Joints Under Unbalanced Loading** *Alain Lachal, National Institute of Applied Sciences - Rennes*	**Experimental Investigation of Post-Tensioned Column Base** *Andrea Surovek, South Dakota School of Mines and Technology*	**Detection of Delamination in RC Structures using Wavelet Packet Analysis** *Xinqun Zhu, University of Western Sydney*
5:25pm - 5:45pm	**Analysis on Cyclic Behavior of Steel Frame-Composite Connections** *Meng Wang, Tsinghua University*	**Extension of EN 1993-1-8 Joint Design Rules to High Strength Steel Grades** *Ana Girao Coelho, Delft University of Technology*	**Control of Excessive Footbridge Vibration Using Tuned Mass Dampers** *Andrew Parker, Heggies Pty Ltd*
6:00pm - 8:00pm	**Welcome Reception** Venue: Transport Exhibition, Powerhouse Museum *Welcome by Mr Steve Finlay, Executive Director, Sydney Division of Engineers Australia*		

Thursday 22 July 2010			
8:00am	Registration Opens		
	Plenary Session 3 *Chairs: Professors David Nethercot & Roberto Leon* Room: Coles Theatre		
9:00am - 9:30am	**Numerical Modelling of Shear Connection in Steel-Concrete Composite Beams** *Professor Mark Bradford, The University of New South Wales*		
9:30am - 10:00am	**Advanced Analysis of Hybrid Frame Structures by Refined Plastic-Hinge Approach** *Professor Siu-Lai Chan, Hong Kong Polytechnic University*		
10:00am - 10:30am	Morning Tea		
	Composite Construction *Chair: Professor Mohammed Hijaj* Room: Coles Theatre	**Steel Structures** *Chair: A/Professor Pedro Vellasco* Room: Target Theatre	**Bridge Structures** *Chair: Dr Xinqun Zhu* Room: Learning Centre A
10:30am - 10:50am	**Stub Column Tests of Concrete-Filled VHS-Plate Fabricated Sections** *Fidelis Mashiri, University of Western Sydney*	**Load Carrying Capacity of High Strength Cold Formed Steel Built-Up Box Sections** *Hieng Ho Lau, Curtin University of Technology*	**Design and Research of a Spatial Cable Nets Supported Bridge** *Wenliang Qiu, School of Civil Engineering*
10:50am - 11:10am	**Modeling of Rectangular Concrete-Filled Steel Tubes Under Partial Compression** *You-Fu Yang, Dalian University of Technology*	**Strengthening of Aluminium Hollow Sections Subjected to End-Two-Flange Loading** *S. M. Zahurul Islam, The University of Hong Kong*	**The Design of Optimization of Singal-Rib Diagonally Crisscross Arch Bridge** *Sheng-Shan Pan, Dalian University of Technology*
11:10am - 11:30am	**Material Model for Concrete for the Realistic Calculation of the time-depending Deflections of Composite Girders** *Frank Böhme, TU Darmstadt*	**European Provisions for the Design of Web-Tapered I-Beams - An Appraisal of the EC3 "General Method"** *Dinar Camotim, Technical University of Lisbon*	**Assembled Steel Beam to Repair a Steel Highway Bridge** *Takashi Hara, Tokuyama College of Technology*
11:30am - 11:50am	**Experimental Results on Steel-Concrete Composite Beams Under Hogging Moment** *Francesca Ceroni, University of Sannio*	**Shear Tests of LiteSteel Beams with Web Openings** *Mahen Mahendran, Queensland University of Technology*	**Czech Research on the Fatigue Behaviour of Steel Bridges** *Shota Urushadze, Institute of Theoretical and Applied Mechanics*
11:50am - 12:10pm		**Reliability-Based Limit State Design of Steel Support Scaffold Frames** *James Reynolds, University of Sydney*	**Research on Construction Control of a Double Arch-Tower Cable-Stayed Bridge** *Wenliang Qiu, School of Civil Engineering*
12:10pm - 1:10pm	Lunch		
	Plenary Session 4 *Chair: Professor Siu-Lai Chan* Room: Coles Theatre		

1:10pm - 1:40pm	**Beam Element for Local Buckling Analysis of Steel Structures** *Professor Eiki Yamaguchi, Kyushu Institute of Technology*		
	Composite Construction *Chair: Dr George Vasdravellis* Room: Coles Theatre	**Steel Structures** *Chair: Professor Robert Xiao* Room: Target Theatre	**Building Structures** *Chair: A/Professor Yong-Bo Shao* Room: Learning Centre A
1:40pm - 2:00pm	**Time Dependent Analysis for of Composite Steel-Concrete Beams with Innovative Deep Trapezoidal Decks** *Olivia Mirza, University of Western Sydney*	**Prediction of Buckling Load of Steel Racking Frame Using Non Destructive Method** *Kalaikumar Vallyutham, Universiti Teknologi PETRONAS*	**Behaviour of blind-bolted moment connection to concrete-filled circular column** *Huang Jack Yao, University of Melbourne*
2:00pm - 2:20pm	**Nonlinear Analysis of Composite Beams with Partial Interaction Including the Combined Effects of Bending and Shear** *Gianluca Ranzi, The University of Sydney*	**Kinematic Models to Simulate the Torsion Warping Transmission at Thin-Walled Steel Frame Joints** *Dinar Camotim, Technical University of Lisbon*	**Introduction of tensile forces in sandwich panels with mechanical fasteners** *Saskia Käpplein, Karlsruhe Institute of Technology*
2:20pm - 2:40pm	**Ultimate Load Behaviour of Composite Plate Girders with Trapezoidally Corrugated Webs** *Khalim Rashid, University Kebangsaan Malaysia*	**Numerical modelling of semi-rigid open beam-to-tubular column connections** *Ahmed Elghazouli, Imperial College London*	**Numerical Modelling of Restrained Structural Subassemblies of Steel Beam to CFT Column in Fire** *Yong Wang, University of Manchester*
2:40pm - 3:00pm	**Nonlinear Analysis of Composite Steel-Concrete Beams Under Combined Bending and Torsion with the Effects of Partial Shear Connection** *Ee Loon Tan, University of Western Sydney*	**A Comparison of International Design Standards for Assessing Lateral Stability of Steel Beams** *Andrea Surovek, South Dakota School of Mines and Technology*	**Experimental study on the flexural behavior of high-strength square CFT members** *KyungSoo Chung, Research Institute of Industrial Science & Technology*
3:00pm - 3:20pm	**Behaviour of Composite Beams Under Combined Bending and Tension** *Brendan Kirkland, University of Western Sydney*		**Inelastic Response of Composite Framed Multi-Storey Buildings** *Luigi Di Sarno, University of Sannio*
3:20pm - 3:50pm	Afternoon Tea		
	Composite Construction *Chair: A/Professor Alain Lachal* Room: Coles Theatre	**Steel Structures** *Chair: Professor Alexandre Landesmann* Room: Target Theatre	**Sustainability** *Chair: Professor Khalim Rashid* Room: Learning Centre A
3:50pm - 4:10pm	**Long term experiments of composite steel-concrete slabs** *Gianluca Ranzi, The University of Sydney*	**Static Strength of Squared Tubular T-joint under Axial Loading with Collar-Plate Reinforcement** *Yong Bo Shao, Yantai University*	**Sustainable Bridge Constructions – Elegant arches – filigree structures – cost effective design** *Ole Josat, Vallourec & Mannesmann Tubes*
4:10pm - 4:30pm	**Long-term and ultimate experiments on composite steel concrete beams designed with partial shear connection** *Safat Al-Deen, The University of Sydney*	**Remaining Pretension Force in Friction Connections** *Christine Heistermann, Luleå University of Technology*	**Behaviour and Strength of Shear Connectors Utilising Blind Bolting** *Olivia Mirza, University of Western Sydney*
4:30pm - 4:50pm	**Long Term Experiments on Composite Floor Systems: Members with Continuous Configuration and Subjected to Hogging Moment with Composite Connections** *Safat Al-Deen, The University of Sydney*	**Towards better understanding of a friction connection in tubular tower for wind turbines** *Marouene Limam, Luleå University of Technology*	**Integrated Structural Health Monitoring for Reinforced Concrete Beams: An Experimental Study** *Ying Wang, The University of Western Australia*
4:50pm - 5:10pm	**Buckling Analysis of Composite Beams with Interlayer Slip** *João Batista Sousa Jr., Universidade Federal De Ouro Preto*	**Material and Geometric Non-Linear Analysis of Perforated Thin-Walled Steel Structures by the Isoparametric Spline Finite Strip Method** *Zhenyu Yao, University of Sydney*	**Fatigue Life Extension of Steel Cope Connections in Bridges** *Joon Pil Hwang, Heggies Pty Ltd*
5:10pm - 5:30pm	**A Study on Load Carrying Capacity of Circular CFTs Using Six International Design Methods** *Pramod Gupta, IIT Roorkee*	**Cyclic Behavior of Steel Beam-to-Box Column Connections with Cover Plates** *Ker-Chun Lin, National Center for Research on Earthquake Engineering (NCREE)*	**Experimental and Theoretical Dynamic Identification and Post-Earthquake Structural Assessment of Public Steel Buildings** *Luigi Di Sarno, University of Sannio*
7:00pm - 11:00pm	**Conference Dinner** Venue: Captain Cook Cruise III		

Friday 23 July 2010			
8:00am	Registration Opens		
	Plenary Session 5 *Chairs: Professors Mark Bradford & Frans Bijlaard* Room: Coles Theatre		
9:00am - 9:30am	**The AISC 2010 Design Provisions** *Professor Roberto Leon, Georgina Institute of Technology*		
9:30am - 10:00am	**Composite Behaviour of Headed Stud Shear Connectors in Pairs with Profiled Metal Deck Flooring** *Professor Dennis Lam, University of Bradford*		
10:00am - 10:30am	Morning Tea		
	Composite Construction *Chair: Professor Matti Leskela* Room: Coles Theatre	**Steel Structures** *Chair: Professor Kim Rasmussen* Room: Target Theatre	**FRP in Steel and Composite Structures** *Chair: Dr Fe-Yu Liao* Room: Learning Centre A
10:30am - 10:50am	**Experimental Behaviour of Pre-Compressed Concrete-Filled Stainless Steel Tubular Columns Subjected to Transverse Impact Loads** *Mohammad Yousuf, University of Western Sydney*	**Nonlinear Numerical Simulation of Flush Endplate Connections in Fire** *Robert Xiao, London South Bank University*	**AE Signal Processing Study Based on HHT for GFRP** *Wei Li, Northeast Petroleum University*
10:50am - 11:10am	**Closed-Form Solution for Two-Layer Composite Shear Deformable Beams with Interlayer Slip** *Mohammed Hijaj, INSA De Rennes*	**An Evaluation of the Prestressed Stayed Steel Columns Load Bearing Capacity with Bayesian Neural Networks** *Marley Vellasco, PUC-RIO Pontifical Catholic University of Rio De Janeiro*	**Behaviour of Tubular Steel Column - Bare, Concrete Filled and Retrofitted** *Kalaikumar Vallyutham, Universiti Teknologi PETRONAS*
11:10am - 11:30am	**Investigation of Seismic Behaviour of Composite Structures with Concrete Filled Square Steel Tubular Column by Push-over Analysis** *Mohammadmehdi Arabnejad Khanouki, University of Malaya*	**Numerical Model of Stainless Steel Plates with Staggered Bolts Subjected to Tension** *Pedro Vellasco, State University of Rio De Janeiro*	**Compressive Performances of the Concrete Filled Circular CFRP-Steel Tubes (1): FE Simulation and Load Bearing Capacity** *Qing Li Wang, Shenyang Jianzhu University*
11:30am - 11:50am	**Static and Dynamic Behaviours of Non-Composite Steel-Concrete-Steel (SCS) Protective Panels Under Large Deformation** *Alex Remennikov, Univeristy of Wollongong*	**Strength Improvement Methods for Back to Back LiteSteel Beams** *Mahen Mahendran, Queensland University of Technology*	**Compressive Performances of the Concrete Filled Circular CFRP-Steel Tubes (2): Theoretical Analysis** *Qing Li Wang, Shenyang Jianzhu University*
11:50am - 12:10pm	**The Stability Study On Steel-Concrete Composite Plates** *Faxiong Li, Tsinghua University*	**Deformationally-Induced Residual Stresses in Cold-Formed Steel Circular Hollow Sections: An Analytical Solution** *Wai-Meng Quach, University of Macau*	**Fatigue Behaviour of CFRP Strengthened Steel Members Under Pure Bending** *Hui Jiao, University of Tasmania*
12:10pm - 1:10pm	Lunch		
	Plenary Session 6 *Chair: Professor Richard Liew* Room: Coles Theatre		
1:10pm - 1:40pm	**Some Recent Developments of Concrete Filled Steel Tubular (CFST) Structures in China** *Professor Lin-Hai Han, Tsinghua University*		

	Composite Construction *Chair: A/Professor Alex Remennikov* Room: Coles Theatre	**Steel Structures** *Chair:A/Professor Hieng Ho-Lau* Room: Target Theatre	**Composite Construction** *Chair: Professor Mario Fontana* Room: Learning Centre A
1:40pm - 2:00pm	**Behavior of Circular Concrete Filled Steel Tubular(CFST) Column using High Strength Steel and Concrete under Eccentric Loading** *Dr Seong Hui Lee, University of Seoul*	**Full Stress Analysis of Steel Storage Industrial Equipments Under Seismic Loading** *Luigi Di Sarno, University of Sannio*	**A Simplified Design Method for Composite Floor Beams with Web Openings in Fire** *Vui Yee Bernice Wong, University of Sheffield*
2:00pm - 2:20pm	**Optimization of geometry and core materials of sandwich panels with metallic faces** *Aneta Kurpiela, Technische Universitaet Darmstadt*	**Design of Cold-Formed Steel Rack-Section Columns under Fire Conditions** *Alexandre Landesmann, Federal University of Rio De Janeiro*	**Fire Strength Analysis of Composite Deformed Metal Decking Flooring System** *Robert Xiao, London South Bank University*
2:20pm - 2:40pm	**Experimental and Analytical Study on Channel Shear Connectors in Light Weight Aggregate Concrete (LWAC)** *Mahdi Shariati, University of Malaya*	**Fire Tests of a New Light Gauge Steel Floor-Ceiling System** *Mahen Mahendran, Queensland University of Technology*	**Performance of SRC Column to SRC Beam Joints Subjected to Simulated Fire Including the Cooling Phase** *Tian Yi Song, Tsinghua University*
2:40pm - 3:00pm	**An Evaluation of the Steel-Concrete Interaction Over the Composite Floors Dynamic Response** *Luciano Lima, State University of Rio De Janeiro*	**Residual Stresses in Welded Box Sections** *Hans De Backer, Universiteit Gent*	**Experimental and Analytical investigations of moment-curvature-temperature behavior of steel and composite beam- columns at elevated temperature** *Jennifer Walz, South Dakota School of Mines and Technology*
3.00pm - 3.15pm	**Conference Closing** Room: Coles Theatre		