

Conference Programme 2011

Tuesday 6th September 2011

ADVANCED
COMPOSITES IN
CONSTRUCTION 2011

09:30	Registration
10:10	Introduction Sue Halliwell, NetComposites & J. Toby Mottram, University of Warwick

FRP Structures

Chairperson: Brian Bell, Network Rail

10:20	Keynote: Strategic Development and Deployment of a Composite Bridge Deck <u>Jerome S. O'Connor</u> , BridgeComposites LLC, Amjad Aref, University of Buffalo and Sreenivas Alampalli, New York State Department of Transportation
10:50	Ministerley Bridge Strengthening Using Novel Methods <u>Lee Canning</u> , Mouchel
11:10	Protection of Heavy Timber Piers both Above and Below Water <u>John Percival</u> , Fibrwrap Construction
11:30	Experimental Campaign on the Full Scale FRP Motorway Bridge <u>Martin Poljansek</u> & Eugenio Gutiérrez, European Commission, & Carlo Paulotto, Acciona Infraestructuras.
11:50	Performance of a PFRP Structure Covering a Historic Building Struck by an Earthquake <u>Salvatore Russo</u> , IUAV University of Venice

12:10	Break
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FRP Strengthening Steel and Timber Structures

Chairperson: Wendel Sebastian, University of Bristol

12:30	An Experimental Investigation on Strengthening Single-Bolted Timber Joints with Externally Bonded CFRP Composites <u>Jiaqi Yang</u> and Scott Smith, The University of Hong Kong
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FRP Stay in Place Formwork

Chairperson: Wendel Sebastian, University of Bristol

12:50	Fibre Reinforced Polymer Grids as Shear Reinforcements in Fabrics Formed Concrete Beams <u>John Orr</u> , and Antony Darby University of Bath
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13:10	Lunch
13:40	Optional tours of the University of Warwick School of Engineering An announcement will be made in the lunch area when the tour is about to commence for interested parties.

Fire and Elevated Temperature

Chairperson: Scott Smith, The University of Hong Kong

14:30	Applied Research and Recent Developments on Composite Material Technology for Structural Strengthening <u>Christoforos Kolyvas</u> , E. Fyfe & M. Karantzikis, Fyfe Europe
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14:50	Repair and Heat Damaged Reinforced Concrete Using Advanced Composite Materials Hanan Al-Nimry, R.H. Haddad, S.K. Afram & M.A. Abdel-Halim, University of Science and Technology
15:10	Effect of Extreme Temperatures on the Bond Behavior of Steel Beams Strengthened with CFRP Plates Mina Dawood and M. El-Tahan, University of Houston
15:30	Strengthening Fire Damaged Circular Concrete Columns with FRP Luke Bisby, Jian-Fei Chen, Tim Stratford, S.Q. Li, N. Cueva and K. Crossling, University of Edinburgh
15:50	Fire testing of insulated RC beams strengthened with NSM reinforcement Stijn Matthys, Aniello Palmieri, L. Taerwe, Universiteit Gent

16:10	Break
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16:40	<div style="text-align: right;">  </div> <p>Young Researchers' Competition Presentations Sponsored by NGCC</p> <p>A set of 10, five minute presentations from the shortlist of our Young Researchers Competition.</p> <ol style="list-style-type: none"> 1. Alexander Naughton, BRE - Fire Resistance Characterisation and Modelling of Natural Fibre Reinforced Polymer Composites for Use in Structural Applications. 2. Guglielmo Carra, Politecnico di Milano - Design and Optimisation of an "All – FRP" Structural Panel for Building Construction. 3. Paul McNulty, Queen's University Belfast - The Development of the Skewed FlexiArch. 4. Peter Gates, University of Bath - Polymeric Facades: Advanced Composites for Retrofit. 5. Philip Isaac, University of Bath - Fundamental Analysis of the Behaviour of Unwrapped and FRP Wrapped RC Columns Subjected to Blast and Impact Loads. 6. Shiqing Li, University of Edinburgh - FRP Strengthening of Fire Damaged Concrete Columns. 7. Yijian Gao, University of Portsmouth - Advanced Composite Floor System. 8. Ghayth Abed, University of Southampton - Effects of Temperature Changes on Steel Beams Strengthened with Bonded Carbon Fibre Reinforced Polymer (CFRP) Plates. 9. Navroop Singh Matharu, University of Warwick - Aspects of Bolted Connections of FRP Structures 10. Behrouz Zafari, University of Warwick - Affect of Hot Wet Aging on the Pin-Bearing Strength of a Pultruded Material.
17:30	Drinks Reception & Delegate Judging of the Young Researcher's Competition

18:30	Close
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Wednesday 7th September 2011

09:00	Registration
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FRP Strengthening: Concrete Structures

Chairperson: Jian-Fei Chen, University of Edinburgh

09:30	Keynote: The Need for More Advanced Techniques for FRP Reinforced Concrete Design <u>Deric J. Oehlers</u> , The University of Adelaide
10:00	Mathematics of Conservativeness in FRP-based Structural Strengthening Design Process <u>Kunal Kansara</u> , Tim Ibell, Antony Darby and Mark Evernden, University of Bath and Jin-Guang Teng, Hong Kong Polytechnic University
10:20	Bond Slip Behaviour Between Carbon Fibre Reinforced Polymer Sheets and Heat Damaged Concrete <u>Rami H. Haddad</u> , Rajai Z. AlRousan and Ashraf Al-Masri, Jordon University of Science and Technology
10:40	FRP Concrete Composite Floor Slabs Xian Gai, Antony Darby, <u>Tim Ibell</u> and Mark Evernden, University of Bath
11:00	Influence of Anchor Embedment Angle on the Strength and Behaviour of FRP-to-Concrete Joints Anchored with FRP Anchors Huawen Zhang and <u>Scott T. Smith</u> , The University of Hong Kong

11:20	Break
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Chairperson: Deric Oehlers, University of Adelaide

11:40	Determination of the Ductility of FP-Strengthened RC Structures <u>Paul Davies</u> , University of Glamorgan and David Tann, London South Bank University
12:00	Behaviour of FRP Reinforced Restrained Slabs Gobithas Tharmarajah, <u>Su Taylor</u> , D.J. Cleland and D.J. Robinson, Queen's University Belfast

FRP Strengthening: Confinement

Chairperson: Deric Oehlers, University of Adelaide

12:20	Experimental Behaviour of Lapped Steel Bars in RC Beams Confined using Steel Stirrups or CFRP Fibres <u>Reyes Garcia</u> , Yasser Helal, Kypros Pilakoutas and Maurizio Guadagnini, University of Sheffield
12:40	Plasticity Based Approach to Analyse the Response of FRP Wrapped Columns Subjected to Impact Loads <u>Philip Isaac</u> , Antony Darby, Tim Ibell and Mark Evernden, University of Bath and Pedro Silva, George Washington University, Washington
13:00	FRP Confined Square and Rectangular Columns Under Concentric and Eccentric Loading <u>Antony Darby</u> , Rachel Coonan, Tim Ibell and Mark Evernden, University of Bath

13:20	Lunch
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Durability and Environmental Conditions

Chairperson: Su Taylor, Queen's University Belfast

14:20	An FRP Durability Study: Mechanical Testing of Panels from the Severn Crossing Visitors Centre <u>Peter Gates</u> , Antony Darby, Mark Evernden and Tim Ibell, University of Bath
14:40	Investigation of Circumferential-Strain Experimental Methodology for FRP Characterisation Francisco H. De Caso y Bassalo and Antonio Nanni, University of Miami and <u>Tim Ibell</u> , University of Bath

15:00	Finite Element Analysis of Eccentrically Loaded Cast Iron Struts Reinforced with CFRP Stuart Moy, University of Southampton & Susan Mustafa Ali, Zagazig University, Egypt
15:20	Break

FRP Reinforced Concrete

Chairperson: Tim Ibell, University of Bath

15:40	NLFEA Response of Damaged Reinforced Concrete Beams Strengthened with Different Types and Configurations of FRP Composites Rajai Al-Rousan and R. Haddad, Jordan University of Science and Technology,
16:00	FRP-PC Members: Evaluation of Torsional Capacity F. Bencardino and Giuseppe Spadea, University of Calabria, Italy, Ghani Razaqpur and L. Rizzuti, McMaster University, Canada
16:20	Effect of Flexural Deformation on Intermediate Crack Induced Debonding in Plated Beams V. Narayanamurthy and Jian-Fei Chen, University of Edinburgh, J. Cairns, Heriot Watt University

TR55 Update

16:40	Key Updates to TR55 Antony Darby, University of Bath
17:00	Close
19:30	Drinks reception and conference dinner

Thursday 8th September 2011

09:00	Registration
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FRP for New Build

Chairperson: Mark Evernden, University of Bath

09:30	STARTLINK Lightweight Building Systems – Wholly Polmeric Structures <u>John Hartley</u> , Exel Composites and John Hutchinson, Feilden and Mawson
09:50	Strength of Fibre Reinforced Polymer Dowel Connections for the Startlink House <u>Behrouz Zafari</u> and J. Toby. Mottram, University of Warwick
10:10	Improving the Dutch FRP Recommendation for Loadbearing Structures <u>Liesbeth Tromp</u> and Kees van Ijelmuijden, Royal Haskoning, Ane de Boer, Centre for Infrastructure
10:30	Toward Designing Pultruded Structures with an ASCE Standard <u>Toby Mottram</u> , University of Warwick
10:50	Non-Linear Finite Element Analysis and Behaviour of FlexiArch Systems with Polymeric Reinforcement <u>John Bourke</u> , Queen’s University, Belfast

11:10	Break
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Chairperson: Lee Canning, Mouchel

11:30	Keynote: Tests and Analyses of GFRP Bridge Decking Spanning Transverseley to Prestressed Concrete Beams <u>Wendel Sebastian</u> and Joel Ross, University of Bristol, Sam Luke, Mouchel and Ben Sadka, Highways Agency
12:00	Concentric and Eccentric Compression Tests on PFRP Equal Angles <u>Mark Evernden</u> and Jake Smith, University of Bath
12:20	Application for Natural Fibre Composite Structural Materials in Building Construction <u>John Hutchinson</u> , Feilden and Mawson
12:40	GRP Design Process Case Study: Haramain High Speed Train Stations, Saudi Arabia <u>Dominique Vosmaer</u> , Buro Happold Ltd

13:00	Lunch
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Joining

Chairperson: Toby Mottram, University of Warwick

14:00	Keynote: Advanced Composite Truss System (ACTS) – Development of a Carbon Fibre Joining Node <u>Neil Farmer</u> and Ian Smith, Tony Gee and Partners LLP
14:30	Simple Shear Connection Developments for Core-Reinforced GFRP Composite Structural Insulated Panels Leo Peirick III and <u>Mina Dawood</u> , University of Houston
14:50	Pultruded GRP Continuous Beams – Comparison of Flexural Test Data with Analysis Predictions <u>Geoff Turvey</u> and J. Merlet, Lancaster University
15:10	An Update of the Imajine Project <u>Richard Lee</u> , ESR Technology Ltd, Stephen Kelly, Doosan Babcock Energy Ltd, Michael Gower, NPL and Hammadi Abichou, Deepsea Engineering and Management Ltd

15:30	Close
15:30 – 16:15	Optional tour of the WMG facilities, those interested should wait in reception.