

ESIA12 - Engineering Structural Integrity Assessment: Where are we now?

28th – 29th May 2013



ESIA12 Programme

Day 1	Time		
	08:15	Registration	
	08:45	Welcome	Prof Andrew Gibson, Head of School of Mechanical, Aero and Civil Engineering
	08:55	Conference Introduction -	Chairman: Brian Tomkins, FESI
Session 1		Keynote Presentations	
	09:00	Challenges for Transport	Prof Rod Smith, Chief Scientific Advisor to Minister for Transport
	09:30	Manufacturing for Marine and Aero Development	Prof Steve Garwood, Rolls-Royce
	10:00	Challenges for Engineering Structural Integrity in China	Prof Shan-Tung Tu, Vice President, East China University

10:30 – 10:45 Refreshments

	10:45	Integration of Test and Analysis for Design and Monitoring of High Performance Structural Dynamics	Prof David Ewins, University of Bristol
	11:15	Integration of Inspection with Structural Integrity Assessment	Dr Keith Newton, Director of RCNDE
	11:45	Challenges for the Regulator	Mr Andrew Holt, Principal HM Inspector, Office for Nuclear Regulation

12:15 – 13:15 Lunch

Session 2		Inspection – Chairman : Dr Keith Newton		Session 3	Integrity Assessment – Chairman: Prof Peter Flewitt
	13:15	Improve availability and reduce maintenance spend whilst maintaining safety using Asset Integrity management and RBI	Mike Anderson, Frazer-Nash Consultancy	The Failure process of the steel frame with damage of fire	Zhu Ju, Harbin Engineering University
	13:35	Semi-autonomous robotic inspection of pressure vessels	Dimitris Karamitsos, Alstom Robotics	Effects of thermal ageing on the lattice strains in a single phase polycrystalline material measured by neutron diffraction	Bo Chen, Bristol University
	13:55	The Fracture Mechanisms of Main Cable Wires from the Forth Road Suspension	Paul Roffey, ESR Technology	A new micro-structurally informed local approach to predict fracture toughness under low constraint conditions	Mike Ford, AMEC Clean Energy
Session 4		Fracture Analysis – Chairman: John Sharples			
	14:15	Reliability Analysis of reinforced	Li-Lai Bai, Harbin University	Role of substrate curvature on	Dong Liu, University of Bristol

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		concrete columns after high temperature		the integrity of multi-layered thermal barrier coated turbine blades	
	14:35	Integrity assessment and remediation of the downcomer system in a steelworks blast furnace	Adam Bannister, Tatasteel, RD&T, Rotherham	Structural Integrity Assessment of Offshore Wind Turbine Foundations under Slippage of the Grouted Joint	Ruth Kennedy, Atkins
	14:55	Consideration of elastic follow-up in fracture assessments of combined primary and secondary stresses	Peter James, AMEC Clean Energy	Fatigue Analysis of a Pressure Vessel Welded Joint using the Stress Integration Method Outlined in the ASME Boiler and Pressure Vessel Code VIII	Rob Plaskitt, HBM-nCode
15:15 – 15:30 Refreshments					
	15:30	Fabrication and characterisation of metal-encapsulated regenerated grating strain sensors for structural integrity Monitoring of high temperature components	Yun Tu, East China University	On-line Structural Damage Feature Extraction Based on Autoregressive Statistical Pattern of Time Series	Ming-Hui Hu, East China University
	15:50	A special finite element to investigate Leak-before-Break	Peter Gill, AMEC Clean Energy		
	16:10	Finish Day 1			
Session 5	17:30 – 18:30 Poster Session, Exhibition and Reception				
19:30 -	Conference Dinner			After Dinner Speaker: Prof Leslie Banks-Sills, President of the European Structural Integrity Society European Structural Integrity Society - Perspectives	

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Day 2				
Session 6		Keynote Presentations – Chairman Dr Brian Tomkins		
	08:30	Non-metallic systems	Prof Rob Ritchie, University of California	
	09:00	Modelling and utilising composites	Prof Ferri Aliabadi, Imperial College London	
	09:30	Delamination Toughness Tests of DCB Specimens Composed of Woven Composites	Prof Leslie Banks-Sills, University of Tel Aviv	
10:00- 10:15		Refreshments		
	10:15	Integrity of engines on land transport	Prof HuiHua Feng, Beijing Institute of Technology	
	10:45	Advances in standards for weld flaw assessments using fracture mechanics	Dr Henryk Pisarski, TWI	
	11:15	Thermo-Mechanical simulation of the Neutron Irradiation Embrittlement Effect on RPV steels	Prof Su Jun Wu, Beihang University	
	11:45	The Status of High Temperature Design Codes	Prof Kamran Nikbin, Imperial College London	
	12:15	Teaching structural integrity to engineers: an integrated approach	Prof Mike Fitzpatrick, the Open University	
12:45 – 13:30		Lunch		
Session 7		Modelling – Chairman: Dr Henryk Pisarski		Session 8 Materials Behaviour – Chairman: Dr David Knowles
	13:30	Multiscale modelling of hydrogen embrittlement: application to industrial problems	Nicholas Winzer, Fraunhofer Institute for Mechanics of Materials	Mechanical behaviour and damage of ceramics-tungsten electron power substrates tri-dimensional multilayers Charlotte Robert, UniverSud
	13:50	Bridging the length and time scales in material modelling	Tony Paxton, Queen’s University, Belfast	Study on the effects of pulse disturbance wave in hypersonic flow over a blunt cone Xiaojun Tang, Harbin Engineering University
	14:10	Multiscale modelling of hydrogen embrittlement in polycrystalline materials	T. N. Croft, Swansea University	3D cellular Automata finite element method to model quasi-brittle fracture Luis Saucedo, Oxford University
	14:30	Modelling and simulation of hydrogen transport in steel	Oliver Rott, ThyssenKrupp	
14:50 – 15:05		Refreshments		
	15:05	Statistical analysis and Monte-Carlo simulations of Warm pre-stressing of pre-cracked Charpy tests	Daniel van Gelderen, University of Bristol	
	15:25	Conference Summary		

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	15:45	Presentation of the Keith Miller Prizes for the Best Student Paper and the Best Student Poster
	16:05	Finish
	16:15	