



UK FORUM FOR ENGINEERING STRUCTURAL INTEGRITY

First Announcement and Call for Papers

11th International Conference on
Engineering Structural Integrity Assessment

ESIA11 Engineering Structural Integrity Assessment: from plant and structure design, maintenance to disposal

24 - 25 May 2011, Manchester UK

This is the eleventh in the series of FESI international conferences on the topic of Engineering Structural Integrity Assessment. The Conferences are a major forum for dissemination and discussion amongst industrial, academic and regulatory bodies in this field. All aspects of this multi-disciplinary subject are addressed including the status of assessment technologies and methodologies in relation to design, operating and disposal of plant, structures and components.

THEME

The continuing need for industry sectors to provide economic advantages to both its investors and its customers, has shown that there is a need for greater investment.

New plant, structures, components and systems must be able to provide increased output at reduced cost - safely and sustainably. Alternatively, there is often an economic argument to extend the life of components and systems. Running parallel is the requirement for the clean disposal of out-of-commission plant and components. This latter topic is an increasingly important issue in view of the potential environmental impact.

Integrity and reliability issues arise during service and require effective maintenance action, whilst, as plant approaches the end of normal design life, intelligent management of life extension can yield considerable commercial benefit, whilst decommissioning and storage issues must be sensitively handled. However, it is important that the design, manufacture and operation of new plant incorporates lessons learned on engineering integrity and apply the new techniques and methodologies developed.

This FESI Conference will be based around the theme of **“Engineering Structural Integrity Assessment: from plant and structure design, maintenance to disposal”**.

It has the aim to show how outputs from recent research and development can lead to improved integrity of structures and components in the area of design and new build, enhance their longevity and develop a greater understanding of the issues surrounding decommissioning and long term storage.

It will:

- examine current needs in terms of sustainable management concepts, strategies and methodologies, regulatory requirements, economic benefits and societal impact,
- address through the development and deployment of condition evaluation and assessment tools; integration into methodologies and their application to the current situation and future planning, both deterministically and probabilistically based; operational challenges of life cycle management for newly designed plant,
- consider case histories demonstrating the applicability to specific plant problems to the improved life management of existing and new structures and components and their disposal (papers here will be particularly welcome),
- consider all major industry and business sectors, including energy, transport, process and civil structures.

Co-sponsors of
ESIA11



Institution of
**MECHANICAL
ENGINEERS**



BRITISH SOCIETY FOR
STRAIN MEASUREMENT

TECHNICAL AREAS

- 0 Inspection and monitoring NDT, NDE, Acoustic Emission and Structural Health Monitoring
- 0 Fretting, wear and surface engineering
- 0 Welding and joining
- 0 Materials properties including fracture
- 0 Fracture and crack growth mechanics
- 0 Fatigue initiation and stress corrosion cracking mechanisms
- 0 Residual stress modelling
- 0 Environmental effect (corrosion, stress corrosion and oxidation)
- 0 Impact damage
- 0 High temperature failure
- 0 Minimisation of the carbon footprint
- 0 Recycling and environmental issues

Associated Areas

Insurance
Environment Risk
Legal
Financial

MAIN TOPICS

- o Fundamental ESI research and new technology
- o Assessment methodologies (sustainable management, risk and safety)
- o Decommissioning and disposal plant onshore/offshore
- o Standards for design and assessment
- o Operational experience including case studies
- o Application of Structural Integrity to Safety Cases
- o Monitoring of offshore structures
- o New build and design for sustainability
- o Environmental impact and consequences
- o Waste management, recycling and sustainability
- o Long term waste storage
- o Carbon footprint of plant and equipment
- o Maintenance planning and avoidance, life extension
- o Reducing CO₂ emissions reducing energy in production methods
- o Monitoring applications
- o Safety case support

SCOPE

It is anticipated that papers will come from and be of interest to the following industry sectors and organisations:

- o Regulators
- o Power Generation
- o Renewable Energy onshore and offshore
- o Defence systems
- o Aerospace
- o Transport (Rail, Automotive)
- o Offshore Oil & Gas
- o Onshore petro/chemical plant
- o Process Plant
- o Civil Engineering Structures, Construction and Infrastructure
- o Biomedical Engineering
- o Medical devices
- o Safety Critical Components
- o Micro and Nano Electronic Engineering.

KEYNOTE PAPERS

Each theme will be introduced by an internationally recognised authority, drawn from the industry, business and academic communities.

KEITH MILLER STUDENT AWARD

The Conference Organisers are keen for Post Graduates to submit papers and have over the years awarded a prize for the best paper and presentation. The Keith Miller Student Award is named in honour of the late Professor Keith Miller FREng, whose work in the area Engineering Structural Integrity was world renowned.

CALL FOR PAPERS

1. Extended abstracts of two A4 pages (including one table, one figure [or no table but 2 figures] and four key references) in MS Word format (Times New Roman)/Microsoft for PCs are invited.
2. Abstracts should indicate the theme and topic area to which it is appropriate and contain the presentation title, the author's name(s) and affiliation(s), five key words and the full contact details of the corresponding author.
3. There is a template on the FESI website to assist in laying out your Abstract www.fesi.org.uk/esia11 then click on Call for Papers.
4. The conference language is English.
5. Papers are accepted on the understanding that an author will present the paper at the Conference in English.

DATES TO NOTE

- Abstracts must be submitted (guidelines are on our website) 1 September 2010
- Authors will be notified of acceptance 1 November 2010 (with guidelines)
- Submission of Full Paper for review 1 March 2011. All papers received at that date will be included in the post conference proceedings of ESIA11

EXHIBITION

An exhibition of equipment and software related to the overall theme will be an integral part of the Conference. Exhibition space is limited. Dedicated time will be set aside to view the exhibition. For information on cost and availability, please contact the Conference Secretariat.

SPONSORSHIP

There are various Conference Events available for sponsoring including the Conference itself, Conference Reception dinner, Conference Dinner, and Conference handouts. For further information please contact the Conference Organising Committee.

VENUE

Manchester Conference Centre, Manchester, UK

CONFERENCE SECRETARIAT CONTACT DETAILS:

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