

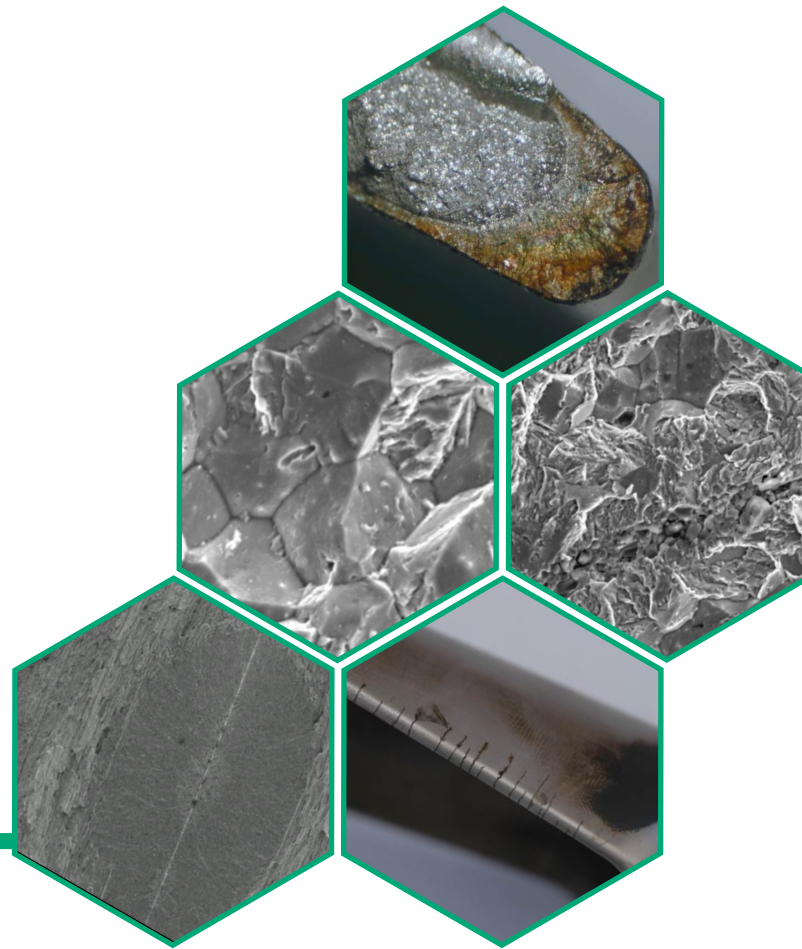


The Engineering Integrity Society

Basic Fatigue Course

19 November 2014

Nettle Hill, Ansty, Coventry



This is a 1-day technical background course aimed at those who encounter structural fatigue calculations and tests in industry. The course does not use any software and is not software specific; it is equally applicable to test and CAE based fatigue calculations.

It explains the basic mechanisms driving fatigue damage, the common methods used in analysis, and some more recent developments. It also dispels some myths.

Basic Fatigue Course

19 November 2014, Nettle Hill, Ansty, Coventry

This course will help engineers and metallurgists to plan tests, perform calculations and interpret results, and is applicable to a wide range of structures. It is aimed at anyone involved in fatigue assessments and testing, assuming a prior knowledge of material behaviour and general structural mechanics, typical of most practicing engineers.

The day will focus on metallic materials although many of the concepts can be applied to other materials. It will cover traditional SN methods and extend to the EN or Local Strain approach. Other topics include: materials testing and statistical scatter and why welds are not the same as the materials they are made from.

Throughout the day the following questions will be answered:

1. What's the difference between SN and EN?
2. Fatigue's only a problem with aluminium isn't it?
3. What is Miner's rule?
4. When you say low cycle fatigue, do you mean the loads are low?
5. How many cycles for high cycle fatigue and how many for low cycle fatigue?
6. How would I know whether it failed through fatigue or just broke?
7. How is fatigue related to UTS?
8. Does fatigue also happen under compressive stresses?
9. What is a Rainflow count?
10. How much material data do I need for fatigue analysis?

The presenters are all experienced practitioners, with a combination of academic and industrial backgrounds: Dr Peter Blackmore, Jaguar Land Rover, Dr Amir Chahardehi, Atkins, Dr Robin Anderson, HBM UK Metallurgy Technical Services

Agenda

- What is Fatigue?
- SN - Basic Analysis
- EN for high and low cycle fatigue
- Materials Testing and Statistics
- Parallel sessions: Surgery for broken parts: bring your own broken parts or photographs for discussion
- Fatigue Analysis of Welded Structures
- Fracture Mechanics and Damage Tolerance
- Q&A



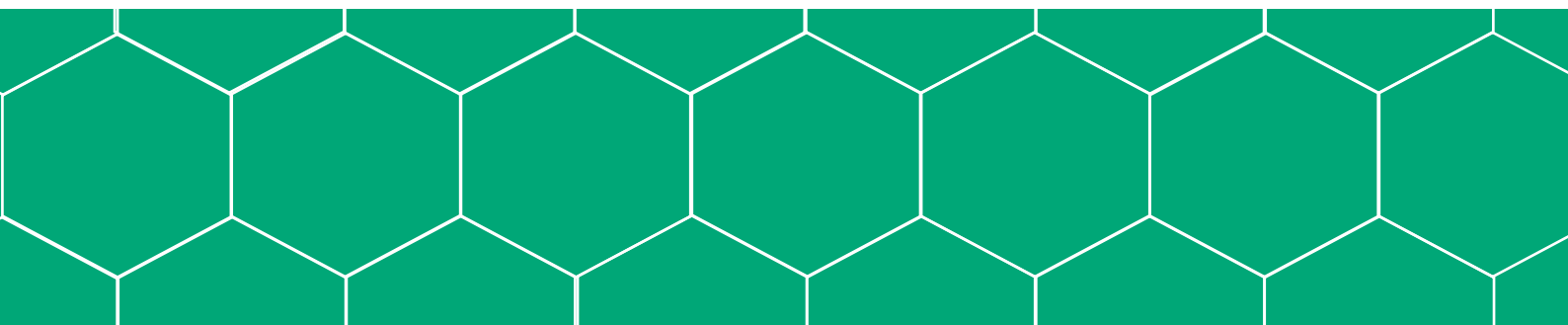
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I enclose a cheque for £_____ made payable to the Engineering Integrity Society		
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Telephone: +44(0)1572 811315 Email: info@e-i-s.org.uk



The Engineering Integrity Society is an independent not-for-profit organisation which aims to inspire all engineers, both experienced and newly qualified, across a broad spectrum of technologies. The Society is committed to promoting events and publications, providing a forum for engineers to discuss present industrial needs, new technologies and to stimulate both company and personal development.

The EIS annual subscription rates are £25 for UK residents and £30 for non-UK residents. Upon joining the Society you will also have the additional advantages of preferential attendance rates at EIS events, together with selected events held by some of the associated organisations. In addition you will have access to CDs containing archived copies of EIS presentations.

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