



FATIGUE 2021

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Online and On-Demand
29 - 31 March 2021

Foreword

The Fatigue 2021 conference will bring the international fatigue and durability community together to share knowledge and understand the challenges in using sophisticated engineering simulation and modelling tools to complement sound test programmes and develop reliable and cost effective products for modern usage.

As engineering modelling and simulation tools become ever more powerful and sophisticated there still remains the challenge of correlating the virtual world with both idealised laboratory testing and the wide, and potentially unexpected, range of service conditions experienced by machines and structures. These challenges are compounded by the advent of new materials, new ways of manufacturing components, new applications and new test and measurement techniques.

We will seek to explore not only the latest developments in engineering modelling and simulation, advances in test and measurement techniques, innovations in manufacturing, and developments in materials science, but also the complex interrelations between all these topics that give rise to improvements in fatigue performance, durability and structural integrity.

The 3 day conference builds on the long established philosophy of the Engineering Integrity Society to provide a forum for practising engineers and researchers to exchange ideas and experiences in all aspects of structural integrity.

Sponsored by:



**Rolls Royce PLC is
pleased to support the
Fatigue 2021 conference**



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Delegates

Delegates attending the live online event can:

- Stream live presentations via the conference portal
- Ask questions & participate in online chat during the live sessions
- Network with speakers and other delegates during the live event
- Visit the live exhibitor 'booths' and chat with exhibitors
- Access the recorded presentations for 6 months after the conference (1 day after the live event)
- Access exhibitor 'booths' for 6 months after the conference (1 day after the live event)
- View abstracts of all presentations for 6 months after the conference
- Access the conference proceedings for 6 months after the conference

Delegates registering after the deadline for live attendance have on-demand access for 6 months after the conference to:

- Watch recorded sessions
- Message authors and other attendees
- Access exhibitor profiles and materials
- View abstracts of all presentations
- Access the conference proceedings

Exhibition

There will be an accompanying exhibition of material testing systems, durability software tools and engineering services where delegates will have the opportunity to discuss the latest developments in the field of fatigue and durability.

Keynote Lectures

Very-high-cycle fatigue of additive manufactured materials - Professor Youshi Hong, Chinese Academy of Sciences

Integrating Cellular Automata and Extended Finite Element Methods to Model Pitting Corrosion and Fatigue Behaviour - Professor Robert Akid, Manchester University

Fatigue-crack propagation in high-entropy alloys at ambient to cryogenic temperatures – Professor Robert Ritchie, University of California

50 years of Fatigue Research: Progress and Perspectives – Professor Roderick Smith, Imperial College

Overview of fatigue design in aerospace electrification - Mukesh Patel, Safran

Conference Topics:

- Additive Manufacturing
- Composites
- Continuum Scale Modelling
- Crack Propagation
- Design & Assessment
- Experimental Methods
- Environmental Fatigue
- Manufacturing
- Microstructure Scale Modelling
- Thermomechanical Fatigue
- Variable & Random Loading
- Welds

Provisional Programme

Monday 29 March 2021

Keynote: Professor Youshi Hong - Chinese Academy of Sciences

Session 1: Additive Manufacturing I

Session 2: Continuum Scale Modelling

Session 3: Welds (hosted by TWI)

Session 4: Experimental Methods I

Session 5: Variable & Random Loading

Session 6: Additive Manufacturing II

Tuesday 30 March 2021

Keynote: Robert Akid - Manchester University

Session 7: Environmental Fatigue

Session 8: Design & Assessment

Session 9: Additive Manufacturing III

Session 10: Composites

Keynote: Professor Roderick Smith - Imperial College

Session 11: Welds II

Session 12: Thermomechanical Fatigue

Session 13: Additive Manufacturing IV

Session 14: Crack Propagation I

Wednesday 31 March 2021

Keynote: Professor Robert Ritchie - University of California

Session 15: Experimental Methods II

Session 16: Microstructure Scale Modelling

Keynote: Mukesh Patel - Safran

Session 17: Design & Assessment II

Session 18: Crack Propagation II

Provisional Programme

With over 65 presenters from across the globe the conference will offer a full programme over the three days. The full provisional programme including list of speakers is available at: www.fatigue2021.com.

Registration

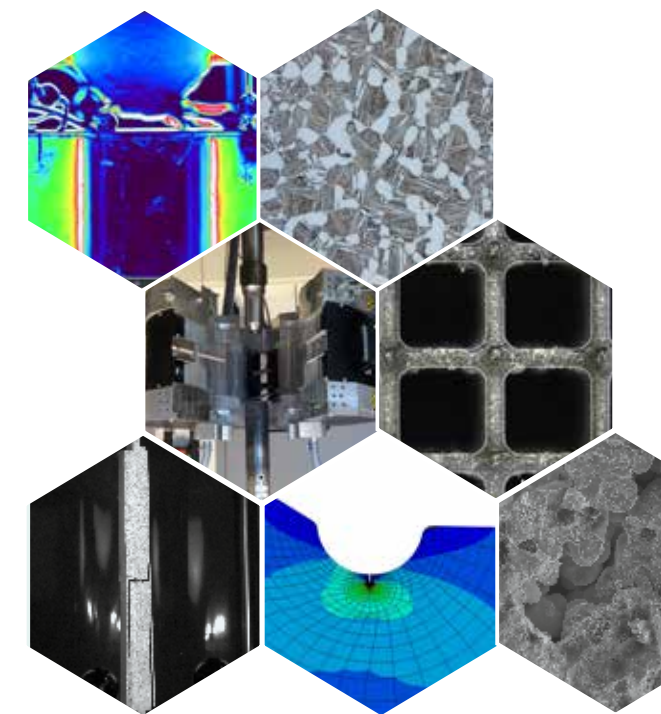
The booking form available at www.fatigue2021.com should be completed and emailed to the conference secretariat, Sara Atkin: info@e-i-s.org.uk The deadline for registration for live attendance is 25 March 2021.

Registration Fees

Presenting Author	£170+VAT
Delegate - EIS Member	£170+VAT
Delegate - Non Member	£200+VAT
Delegate - Student	£110+VAT

Please find all the latest information relating to the conference and details of how to book your place on the Fatigue 2021 website.

www.fatigue2021.com





INTERNATIONAL SCIENTIFIC COMMITTEE

André Galtier (France)
Andrea Carpinteri (Italy)
Martin Bache (UK)
Christophe Pinna (UK)
Filippo Berto (Norway)
Francesco Iacoviello (Italy)
Hossein Farrahi (Iran)
Youshi Hong (China)
Jie Tong (UK)
Johan Moverare (Sweden)
Luca Susmel (UK)
Liviu Marsavina – (Romania)
Marc Geers (The Netherlands)
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Muhsin J Jweeg (Iraq)
Alfredo Navarro (Spain)
Phil Irving (UK)
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CONFERENCE SECRETARIAT

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