

# NON DESTRUCTIVE TESTING 2017

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ENGINEERS**

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Knowledge Transfer  
**Conference**

**21-22 March 2017**

IMechE Engineering Training Centre  
Sheffield

## KEY SPEAKERS INCLUDE:

Richard Day  
Group Head of Inspection Management  
**RWE**

Bernard McGrath  
Operations Manager, MID & MCRL  
**Amec Foster Wheeler**

Tim Barden  
Scientist NDE  
**Rolls-Royce**

David Hallam  
Senior Ageing Platforms Engineer  
**Dstl Ministry of Defence**

John Harris  
Senior Engineer (Non-Destructive Testing)  
**Network Rail**

Save 10% before 27 January 2017 [www.imeche.org/NDT2017](http://www.imeche.org/NDT2017)



## SUPPORTING ORGANISATIONS:



## EVENT PARTNER:



# NON DESTRUCTIVE TESTING 2017

21–22 March 2017

IMechE Engineering Training Centre, Sheffield

**GAIN A CLEAR UNDERSTANDING OF NEW NDT TECHNIQUES AVAILABLE AND REAL-TIME MONITORING TECHNOLOGIES TO IMPROVE RELIABILITY, REDUCE WARRANTY CLAIMS AND ACHIEVE HIGHER LEVELS OF CUSTOMER SATISFACTION.**

With recent developments in Non-Destructive Testing (NDT) methods and technologies, reliance on traditional methods due to standards, guidelines and practice is questionable. In a landscape where inspections are asking more of NDT processes and explanation, ensuring the right method is being used at the right time to provide the best results is crucial.

**Non Destructive Testing 2017** will bring together experts from across the field of NDT. Attendees will gain an understanding of how to get the most out of NDT, the new techniques available and their reliability. They will also understand the developments being made with real time monitoring solutions and testing of composites.

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## 2017 ADVISORY BOARD:

Simon Quinn, Professor of Experimental Mechanics  
**University of Southampton**

Peter Thayer, Director NDE Research Association  
**Imperial College**

Mark Dowell, Managing Director  
**IMechE Engineering Training Solutions**

Tim Barden, Scientist NDE  
**Rolls-Royce**

## KEY PROGRAMME HIGHLIGHTS:

- **RWE** and **Network Rail** discuss how to enhance the effectiveness of NDT
- Assess advanced NDT techniques and their ability to replace traditional methods with **Plant Integrity, University of Southampton** and **University of Bristol**
- Gain technique insights on Phased Array Ultrasonics, Guided Wave Testing and Thermography
- Review the reliability and probability of detection with NDT techniques
- Understand the impact Human Factors can have on NDT and how **Amec Foster Wheeler** consider and overcome errors as a result
- Hear how **Dstl (Ministry of Defence)** use NDE to support remnant life prediction of military platforms and its use in assessing structural integrity

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## LOCATION AND VENUE

IMechE Engineering Training Centre, Sheffield

- A first class training, conference and events venue, located at the heart of Sheffield's engineering and research and development community.
- The IMechE Engineering Training Centre, opened in August 2015 and is the head office of IMechE Engineering Training Solutions. Following a complete refurbishment and installation of high specification equipment, it is the UK's premier training facility for NDT and Inspection and wider engineering training courses.
- Located just outside Sheffield city centre with excellent local amenities and transport links, delegates benefit from an excellent learning environment with the latest equipment and facilities on offer.

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Get in touch to secure your discounted accommodation rates.

Contact Cezara Iovu at [c\\_iovu@imeche.org](mailto:c_iovu@imeche.org)

**BOOK YOUR PLACE TODAY**  
**WWW.IMECHE.ORG/NDT2017**

**TERMS AND  
CONDITIONS  
APPLY**

# PROGRAMME

DAY 1	21 MARCH 2017
08:30	<b>REGISTRATION AND REFRESHMENTS</b>
09:00	<b>CHAIR'S OPENING REMARKS</b> Professor Simon Quinn, Professor of Experimental Mechanics, University of Southampton
09:10 <b>PANEL DISCUSSION</b>	<b>ENHANCING THE EFFECTIVENESS OF NON-DESTRUCTIVE TESTING (NDT)</b> Richard Day, Group Head of Inspection Management, RWE Mark Dowell, Managing Director, IMechE Engineering Training Solutions John Harris, Senior Engineer (Non-Destructive Testing), Network Rail
09:50	<b>APPLYING THE RIGHT METHOD TO THE RIGHT INSPECTION</b> Mark Dowell, Managing Director, IMechE Engineering Training Solutions
10:20 <b>CASE STUDY</b>	<b>CERTIFICATION OF NDT PERSONNEL – DOES A GENERIC 3RD PARTY SCHEME MEET THE REQUIREMENTS OF ALL INDUSTRY SECTORS</b> Richard Day, Group Head of Inspection Management, RWE
10:50	<b>QUESTION AND ANSWER SESSION</b>
11:00	<b>NETWORKING REFRESHMENT BREAK</b>
	NON-DESTRUCTIVE TESTING TECHNIQUES
11:30 <b>PANEL DISCUSSION</b>	<b>ASSESSING ADVANCED NDT TECHNIQUES AND THEIR ABILITY TO REPLACE TRADITIONAL METHODS</b> Janice Barton, Professor of Experimental Mechanics, University of Southampton Bruce Drinkwater, Professor of Ultrasonics, University of Bristol Paul Jackson, Manager, Plant Integrity
12:10	<b>REDUCING THE RELIANCE ON RADIOGRAPHY THROUGH ULTRASONICS</b>
12:40	<b>TECHNIQUE INSIGHT A: PHASED ARRAY (PA) ULTRASONICS</b> Bruce Drinkwater, Professor of Ultrasonics, University of Bristol
13:10	<b>NETWORKING LUNCH</b>
14:10	<b>TECHNIQUE INSIGHT B: GUIDED WAVE TESTING (GWT)</b> Paul Jackson, Manager, Plant Integrity (TWI)
14:40	<b>TECHNIQUE INSIGHT C: THERMOGRAPHY</b> Janice Barton, Professor of Experimental Mechanics, University of Southampton
15:10	<b>QUESTION AND ANSWER SESSION</b>
15:25	<b>NETWORKING REFRESHMENT BREAK</b>
	USING NDT FOR CRITICAL ANALYSIS AND LIFE PREDICTION
15:55	<b>ENGINEERING CRITICAL ASSESSMENT (FIT FOR PURPOSE) CONCEPTS AND NDT</b> Alan Smith, Consultant, Alan Smith Integrity Assessment and Chairman of BS7910 Working Group on NDT and ECA
16:25	<b>NON DESTRUCTIVE EVALUATION (NDE) – A CORNERSTONE OF AGEING MILITARY PLATFORM STRUCTURAL INTEGRITY</b> David Hallam, Senior Ageing Platforms Engineer, Dstl Ministry of Defence
16:55	<b>QUESTION AND ANSWER SESSION</b>
17:05	<b>CHAIR'S CLOSING REMARKS</b>
17:10	<b>END OF DAY ONE</b>

**For the most up-to-date and detailed programme for the event, please visit:**  
[www.imeche.org/NDT2017](http://www.imeche.org/NDT2017)

- This programme is subject to change.
- The Institution is not responsible for the views or opinions expressed by individual speakers.

DAY 2 22 MARCH 2017	
08:30	REGISTRATION AND REFRESHMENTS
09:00	<b>CHAIR'S OPENING REMARKS</b> Professor Simon Quinn, Professor of Experimental Mechanics, University of Southampton
	RELIABILITY OF NON-DESTRUCTIVE TESTING
09:10 PANEL DISCUSSION	<b>REVIEWING THE RELIABILITY AND PROBABILITY OF DETECTION WITH NDT TECHNIQUES</b> Tim Barden, Scientist NDE, Rolls-Royce Bernard McGrath, Operations Manager, MID & MCRL, Amec Foster Wheeler Robert Smith, Professor of NDT and High Value Manufacturing, University of Bristol
09:50	<b>INSPECTION RELIABILITY ASSESSMENT BY PROBABILITY OF DETECTION</b> Tim Barden, Scientist NDE, Rolls-Royce
10:20	NETWORKING REFRESHMENT BREAK
10:50	<b>THE USE OF SIMULATION FOR THE ESTIMATION OF PROBABILITY OF DETECTION</b> Pierre Calmon, Research Director, Non Destructive Testing, French Alternative Energies and Atomic Energy Commission (CEA)
11:20	<b>THE ACHIEVEMENT OF RELIABLE NDT RESULTS</b> Bernard McGrath, Operations Manager, MID & MCRL, Amec Foster Wheeler
11:50	QUESTION AND ANSWER SESSION
12:05	NETWORKING LUNCH
13:05 DEBATE AND DISCUSSION	<b>WHAT ARE THE REQUIREMENTS NDT NEEDS TO MEET AND HOW CAN THESE BE ACHIEVED?</b> In table groups, attendees will discuss the topic area to share an understanding of the different needs and requirements for other industries. Feedback from the groups will then be delivered back to the wider group and audience.
13:40	DEBATE FEEDBACK
	NDT FOR COMPOSITES
13:50	<b>NDT OF COMPOSITE STRUCTURES AND THE LINK TO STRUCTURAL INTEGRITY</b> Robert Smith, Professor of NDT and High Value Manufacturing, University of Bristol
14:20	NETWORKING REFRESHMENT BREAK
14:50	<b>USING NDT TO CHARACTERISE MATERIAL PROPERTIES</b> MOVING TO REAL TIME MONITORING
15:20	REAL TIME MONITORING SOLUTIONS
15:50	QUESTION AND ANSWER SESSION
16:05	CHAIR'S CLOSING REMARKS
16:10	END OF CONFERENCE

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## WHO SHOULD ATTEND?

THOSE DIRECTLY AND INDIRECTLY INVOLVED WITH NON-DESTRUCTIVE TESTING/ EXAMINATION AND CONDITION MONITORING INCLUDING:

- Railway and axle testing
- Aerospace
- Marine
- Automotive
- Construction
- Power generation
- Nuclear
- NDT of food
- NDT in forensic science
- Automated and robotic NDT
- Theoretical modelling
- Inspection qualification
- Composites
- Adhesives and bonding
- Thermography
- Ultrasonics
- Phased arrays
- Electromagnetics
- Radiography
- Digital radiography
- Digital signal processing and imaging
- Novel techniques
- Monitoring
- Research

### KEY BENEFITS INCLUDE:

- Assess the development of tools and techniques versus standards, guidelines and qualifications
- Join key discussions with **RWE, Network Rail, Rolls-Royce, Dstl (MoD)** and many more from across the field of NDT
- Hear how to apply the right method to the right inspection and how to align NDT with engineering for an integrated approach
- Gain the latest insights on Guided Wave, Phased Array and Thermography from **Plant Integrity, University of Bristol** and **University of Southampton**
- Learn about the advanced NDT techniques available and their ability to replace traditional methods
- Network and engage with colleagues, peers and industry innovators from across the field of NDT

## SPONSORSHIP OPPORTUNITIES

### CREATE A BESPOKE STRATEGY THAT PLACES YOUR COMPANY IN FRONT OF SENIOR DECISION MAKERS

Engage face to face with your target market of senior engineers

Extensive networking opportunities to help you forge strong long-term business relationships with leading industry players

Firmly establish thought leadership credentials within your specialist field

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Deliver high-profile and relevant brand exposure

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### CONTACT THE SPONSORSHIP TEAM ON:

T: **+44 (0)20 7973 1309**

E: **[sponsorship@imeche.org](mailto:sponsorship@imeche.org)**



## HOW TO BOOK YOUR PLACE

### FEES AND CHARGES

Registration fees include entry to the sessions, refreshments and a copy of the conference proceedings.

Delegate Type	Early Bird Rates Until 27 January 2017	Standard Rates
Member, Institution of Mechanical Engineers/ Supporting organisation	£360 + VAT = £432	£400 + VAT = £480
Non-member	£450 + VAT = £540	£500 + VAT = £600
Student/Retired	£120 + VAT = £144	£136 + VAT = £163.20

Group booking discounts are available. Contact us for more information: [eventenquiries@imeche.org](mailto:eventenquiries@imeche.org).

### THREE WAYS TO BOOK

- 1 Online:  
[www.imeche.org/NDT2017](http://www.imeche.org/NDT2017)
- 2 Email:  
[eventenquiries@imeche.org](mailto:eventenquiries@imeche.org)
- 3 Phone:  
**+44 (0)20 7973 1251**

Please read the information listed below as each booking is subject to the Institution's standard terms and conditions.

#### CONDITIONS OF BOOKING

Completed application forms should be returned to the address above, along with the correct payment. Attendance at the event will be confirmed on receipt of the full balance. All participants are advised to bring a copy of their confirmation with them on the day, to ensure the fastest possible entry.

#### SPECIAL REQUIREMENTS

Please inform us of any special requirements, ie dietary or access, on the relevant section of this form.

#### CANCELLATION

For a refund (minus £25+VAT admin charge), cancellations must be received at least 30 days prior to the event. Replacement delegates are welcome at any time. The Institution reserves the right to cancel any event. In this case, the full fee will be refunded unless a mutually convenient transfer can be arranged. In the event that the Institution postpones an event for any reason and the delegate is unable or unwilling to attend on the rescheduled date, they will receive a full refund of the fee paid. The Institution is not

responsible for any loss or damage as a result of a substitution, alteration or cancellation/postponement of an event. The Institution shall assume no liability whatsoever if this event is cancelled, rescheduled or postponed due to a fortuitous event, Act of God, unforeseen occurrence or any other event that renders performance of this conference impracticable, illegal or impossible. For the purposes of this clause, a fortuitous event shall include, but not be limited to: war, fire, labour strike, extreme weather or other emergency.

Please note that while speakers and topics were confirmed at the time of publishing, circumstances beyond the control of the organisers may necessitate substitutions, alterations or cancellations of the speakers and/or topics. The Institution reserves the right to alter or modify the advertised speakers and/or topics if necessary without any liability to you whatsoever. Any substitutions or alterations will be updated on the event's webpage as soon as possible.

#### LIABILITY

The organisers do not accept liability for any injuries or losses of any nature incurred by delegates and/or accompanying persons, nor for loss or damage to their luggage and/or personal belongings.

#### CONFERENCE VENUE

Institution of Mechanical Engineers  
Training Centre, Sheffield  
4 Europa View  
Sheffield, South Yorkshire, S9 1XH

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We are the market leader among professional engineering bodies. We've been supporting engineers since 1847 and have 113,000 members in over 140 countries, working in the world's most dynamic and important industries. Our comprehensive events programme brings you the latest research and best practice from industry and academia.

### OTHER EVENTS TO LOOK FOR



#### ADAS 2017: ADVANCED DRIVER ASSISTANCE SYSTEMS

28-29 March 2017, Birmingham

Hear the latest developments being made with advanced driver assistance systems, how they are being integrated and interacting with the driver, and the pathway to level 5 autonomy.

[www.imeche.org/ADAS](http://www.imeche.org/ADAS)



#### DRONES 2017: ACCIDENT AND INVESTIGATION

21 February 2017, Cranfield University, Cranfield

Hear guidance directly from the Ministry of Defence, key Accident Investigation branches, as well as fire and police departments. Furthermore, take the opportunity to experience drone technology first hand with live demonstrations.

[www.imeche.org/drones](http://www.imeche.org/drones)

The Institution of Mechanical Engineers organises over 120 events a year, including free-to-attend lectures as well as conferences, seminars, annual luncheons and dinners. Please visit [www.imeche.org/events](http://www.imeche.org/events) for the complete list of events.

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 [twitter.com/imecheevents](https://twitter.com/imecheevents)

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## SPONSORSHIP & EXHIBITION OPPORTUNITIES

### GET INVOLVED

Attending this event as either an exhibitor or sponsor will give you the opportunity to display your solutions, services and products to the right people at the right time.

### BENEFITS OF SPONSORING

- **Showcase** new products
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