MOVING FORWARD IN MANUFACTURING: EVALUATING THE STATE-OF-THE-ART IN MODELLING TECHNIQUES.

Structural Technology and Materials Group Seminar

30 October 2013 Nottingham

www.imeche.org/events/S1798

EARLY BOOKING DISCOUNTS UNTIL 18/9
WHY YOU SHOULD BE THERE

With the development of extremely powerful computational methods, such as the finite element method, it is now possible to model highly complex engineering systems and processes.

Evaluating key methods to optimise your manufacturing processes whilst reducing development times for new products and systems, the lessons learnt at this seminar will impact across manufacturing industries from aerospace to power generation.

The innovative methods explored will enable you to understand how state-of-the-art modelling manufacturing processes can apply to:

- additive manufacturing
- residual stresses
- welding
- severe plastic deformations
- metal cutting
- abrasive water-jets
- drilling and machining

Join highly experienced researchers to explore methods and simulations and ensure your work is modelled effectively, efficiently and correctly.

WHEN 30 October 2013
WHERE The Gallery, East Midlands Conference Centre, University Park, Nottingham NG7 2RJ
BOOK ONLINE www.imeche.org/events/S1798

SUPPORTING ORGANISATIONS

BSSM www.b-s-s.org.uk
iED
IOM3
NAMFES

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.

This is an excellent way to enhance your company profile and communicate effectively to your target audience.

For sponsorship and exhibition enquiries, please contact Aman Duggal on +44 (0)20 7973 1309 or a_duggal@imeche.org

OTHER EVENTS TO LOOK FOR:

18 September 2013, Loughborough
TRIBO-DYNAMICS OF IC ENGINE PISTONS SYSTEMS.
Addressing how the automotive industry can balance the need to meet regulations with the customer’s desire to increase specific output, power and reliability.
www.imeche.org/events/S1795

10 October 2013, Bristol
ADVANCES IN DESIGN AND MANUFACTURE OF COMPOSITES.
Lightweight aircraft costs must be balanced with primary performance objectives for ease of manufacture and maintenance. Exploring all aspects of composite research and design.
Contact aerospace@imeche.org to find out more about this event

24 October 2013, Bristol
MODERN EXPERIMENTAL TECHNIQUES: TESTING, MEASURING AND MONITORING.
How emerging, experimental technologies impact on the aerospace industry, explore new technologies available in physical materials testing, health monitoring and controls.
aerospace@imeche.org

FOLLOW OUR WEEKLY UPDATES ON WWW.IMECHE.ORG

If you are interested in any of these events, please contact Lisa Meenan on +44 (0)20 7973 1242 or l_meenan@imeche.org

BENEFITS OF ATTENDANCE:

- Learn about the latest software packages for use across manufacturing sectors
- Discover new methods used for predicting stresses created during manufacturing processes
- Evaluate valuable findings from the latest research carried out on the development of material behaviour models
## SPEAKERS AND CONTRIBUTORS

### DR ANAS YAGHI
**Senior Research Engineer, Manufacturing Technology Centre**
Anas has previous research experience in the field of stress analysis and integrity of metal components and is now involved in manufacturing simulation (process modelling).

### DR BALJESH MEHMI
**Senior Account Manager, ALTAIR**
Baljesh has vast experience in manufacturing simulation, including metal stamping, welding and extrusion techniques. His responsibilities at ALTAIR include business development and management.

### PROF DRAGOS AXINTE
**Director of UTC, University of Nottingham**
Dragos’ research interests include innovative manufacturing processes, advanced machining and finishing technologies and extend to workpiece surface integrity analysis.

### PROF VADIM SILBERSCHMIDT
**Chair of Mechanics of Materials, Loughborough University**
Vadim has worked at Loughborough for 13 years, co-authoring more than 300 peer-reviewed scientific papers on mechanics and micromechanics of deformation, damage and fracture in advanced materials.

## PROGRAMME

### SESSION ONE
**Wednesday 30/10**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30</td>
<td>Registration and Refreshments</td>
</tr>
<tr>
<td>10:15</td>
<td>Welcome and Introduction</td>
</tr>
<tr>
<td>10:25</td>
<td>Simulation of Additive Manufacturing</td>
</tr>
<tr>
<td>11:00</td>
<td>Designing for Additive Layer Manufacturing</td>
</tr>
<tr>
<td>11:35</td>
<td>Refreshments</td>
</tr>
<tr>
<td>12:05</td>
<td>Simulation of Drilling and Micromachining</td>
</tr>
<tr>
<td>12:40</td>
<td>Simulation of Abrasive Water-Jets</td>
</tr>
<tr>
<td>13:15</td>
<td>Lunch</td>
</tr>
</tbody>
</table>

### SESSION TWO

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:15</td>
<td>Finite Element Modelling of the Fusion Welding of Martensitic Steel</td>
</tr>
<tr>
<td>14:50</td>
<td>Residual Stress and Distortion Control of Aerospace Discs</td>
</tr>
<tr>
<td>15:25</td>
<td>Refreshments</td>
</tr>
</tbody>
</table>

### SESSION THREE

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:55</td>
<td>Optimising Manufacturing Processes to Produce Higher Quality Products Quickly and Efficiently</td>
</tr>
<tr>
<td>16:30</td>
<td>Deploying the Virtual Body Shop: Giving Confidence in Right First Time Manufacture</td>
</tr>
<tr>
<td>17:05</td>
<td>Discussion</td>
</tr>
<tr>
<td>17:15</td>
<td>Chairman’s Conclusions</td>
</tr>
</tbody>
</table>

### SESSION FOUR

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>17:20</td>
<td>Close of Seminar</td>
</tr>
</tbody>
</table>

Find out more about our speakers at www.imeche.org/events/S1798

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

Structural Technology and Materials Group
Organising committee:
Professor Adib Becker, University of Nottingham

The committee would like to thank the following supporters:
Aerospace Division
Tribology Group
Please complete and return this form to:

**EVENT REGISTRATIONS**
Institution of Mechanical Engineers
1 Birdcage Walk, London SW1H 9JJ
Fax +44 (0)20 7222 9881

For registration enquiries call
Tina Churcher on +44 (0)20 7973 1258 or email t.churcher@imeche.org

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 14 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 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. As such, 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.

**SUPPORTING ORGANISATIONS**
BSSM, EIS, IED, IOME, NAFEMS
Members of supporting organisations can register at members’ rates.

**VENUE**
This event will be held at The Gallery, East Midlands Conference Centre, University Park, Nottingham NG7 2RJ.

**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.

**ACCOMMODATION**
We have arranged special discounted rates at local hotels via the Corporate Team.
Tel: +44 (0)20 7592 3050
E-mail: events@corporatesteam.com
Quote ID Number: 9488AMMP
http://www.corporatesteam.com/events/9488AMMP

**ENQUIRIES**
For event enquiries, please contact
Lisa Meenan
on +44 (0)20 7973 1242 or email l.meenan@imeche.org

The Institution of Mechanical Engineers is a registered charity (no 206882)
VAT No GB299930493.

---

**BOOKING FORM**

**REGISTRATION** Please complete in capitals.

<table>
<thead>
<tr>
<th>Family Name</th>
<th>Title (Mr, Mrs, Miss)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name</td>
<td>Job Title</td>
</tr>
<tr>
<td>Membership No</td>
<td>Institution</td>
</tr>
<tr>
<td>Name of Organisation (for name badge)</td>
<td></td>
</tr>
<tr>
<td>Address for correspondence</td>
<td></td>
</tr>
<tr>
<td>Town/City</td>
<td>Postcode</td>
</tr>
<tr>
<td>Contact Telephone</td>
<td>Email</td>
</tr>
<tr>
<td>Do you have any special requirements?</td>
<td></td>
</tr>
</tbody>
</table>

**FEES AND CHARGES** Please complete the appropriate box.

- Registration fees include entry to the sessions, refreshments, lunch, and a copy of the event proceedings.

**DELEGATE FEES**

<table>
<thead>
<tr>
<th>Fee</th>
<th>VAT</th>
<th>Total £</th>
</tr>
</thead>
<tbody>
<tr>
<td>£230.00</td>
<td>£46.00</td>
<td>£276.00</td>
</tr>
<tr>
<td>£230.00</td>
<td>£46.00</td>
<td>£276.00</td>
</tr>
<tr>
<td>£299.00</td>
<td>£59.80</td>
<td>£358.00</td>
</tr>
<tr>
<td>£45.00</td>
<td></td>
<td>£45.00</td>
</tr>
<tr>
<td>£265.00</td>
<td>£53.00</td>
<td>£318.00</td>
</tr>
<tr>
<td>£265.00</td>
<td>£53.00</td>
<td>£318.00</td>
</tr>
<tr>
<td>£340.00</td>
<td>£68.00</td>
<td>£408.00</td>
</tr>
<tr>
<td>£60.00</td>
<td>£12.00</td>
<td>£72.00</td>
</tr>
</tbody>
</table>

**EXTRA ITEMS**

<table>
<thead>
<tr>
<th>Fee</th>
<th>VAT</th>
<th>Total £</th>
</tr>
</thead>
<tbody>
<tr>
<td>£10.00</td>
<td>£2.00</td>
<td>£12.00</td>
</tr>
</tbody>
</table>

**PAYMENT DETAILS**

- Payment must accompany this registration form. Registration will be confirmed only on receipt of full payment.

Please indicate method of payment: □ Cheque □ Credit Card □ BACS □ Invoice (see below)

Cheques should be made payable to IMechE and crossed. Please note international delegates may only pay by credit card, BACS or banker’s draft. A copy of the draft must accompany this form. It is the delegate’s responsibility to pay any bank charges.

**Credit Card:** □ Visa □ MasterCard (please note we cannot accept American Express, Diners Club or Maestro)

<table>
<thead>
<tr>
<th>Card No</th>
<th>Valid From</th>
<th>Expiry Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Name of Cardholder**

Billing Address of Cardholder (If different from above)

**Amount to be Deducted**

Postcode

**INVOICE DETAILS (UK DELEGATES ONLY)**

- Delegate wishing to be invoiced must provide an order number. If your company does not use order numbers please include a formal request for invoicing on your company’s letterhead. A charge of £10 +VAT will be made to cover additional administration costs. Invoices are payable on receipt and no alterations to these terms will be accepted.

**Order No**

<table>
<thead>
<tr>
<th>Contact Name</th>
<th>Name and Address for Invoicing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Postcode**

**Tel**

BACS bank transfers can be made to: IMechE Current Account, NatWest Charing Cross Branch.

Sort code: 60-40-05 Acc No: 00817767

IBAN Code: GB96NWBK60400500817767

For added convenience you can also book online at: [www.imeche.org/events/S1798](http://www.imeche.org/events/S1798)