

COMPUTER AIDED ENGINEERING FOR BULK MATERIALS HANDLING

Institution of
**MECHANICAL
ENGINEERS**

Process Industries Division
Seminar

24 September 2015
London

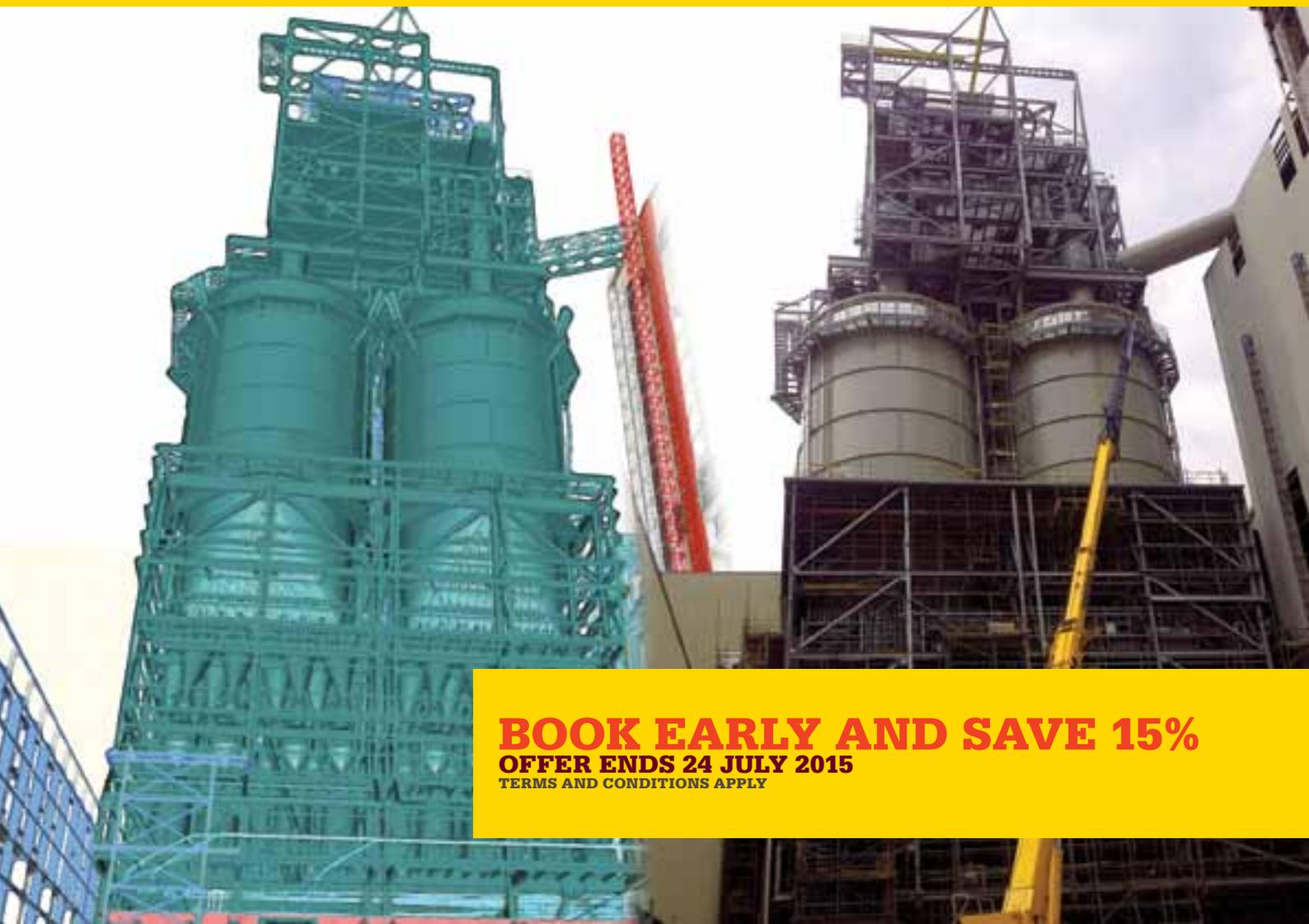
www.imeche.org/CAE-BULK

KEYNOTE SPEAKERS:

Demir Ali,
Technical Specialist, Autodesk

Alan Coles,
Technical Manager, Dassault Systemes
SOLIDWORKS

Carl Brookes,
Director, Ramboll Advanced Engineering
and Geomatics



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TERMS AND CONDITIONS APPLY

COMPUTER AIDED ENGINEERING FOR BULK MATERIALS HANDLING

24 September 2015, London

HOW CAN COMPUTER AIDED ENGINEERING SUPPORT THE BULK MATERIALS INDUSTRY?

Review of the costs and benefits for design, manufacturing, sales and end users of moving from outdated design methodologies to the latest computer aided technology.

This seminar will provide delegates with an opportunity to update their knowledge of the systems they currently use and discover ways to better utilise their software.

They will also be able to review how the latest CAE tools improve the accuracy and speed of the design process from the preparation of sales presentations to manufacturing drawings.

Speakers will also outline how to integrate all the relevant design disciplines to optimise designs and avoid conflicts that would be costly to resolve on site. Knowledge would be relevant to all industries.

BENEFITS OF ATTENDANCE:

- **Gain** an understanding of the range and types of systems and technology available
- **Identify** the latest methods and techniques that are being adopted
- **Explore** new innovations in CAE/CAD
- **Recognise** how the technologies can benefit your business
- **Discuss** ideas to help reduce project development time

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SUPPORTING ORGANISATIONS:



THE WOLFSON CENTRE
for Bulk Solids Handling Technology
at The University of Greenwich

KEY TOPICS

- Modelling equipment and plant layouts for the bulk industry of the future
- Structural design and fabrication
- Stress analysis for day to day design
- Particle flow and DEM modelling
- Developments of laser 3D scanning
- Presentation and visualisation of designs and concepts

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PROGRAMME

DAY

THURSDAY 24 SEPTEMBER 2015

09:00

REGISTRATION AND REFRESHMENTS

09:30

CHAIR'S OPENING REMARKS

Graham Leason, Bulk Materials Handling Committee, Institution of Mechanical Engineers

09:40

EXPERIENCING IT BEFORE IT'S REAL: WHAT'S POSSIBLE WITH TODAY'S 3D SYSTEMS

Demir Ali, Technical Specialist, Autodesk

- An introduction to 3D modelling and parametric design
- Exploring multiple design iterations from a single model
- Rapid production of detailed engineering drawings from your model

10:10

MOVING TO 3D MODELLING FOR THE BULK INDUSTRY

Alan Coles, Technical Director, Dassault Systemes SOLIDWORKS and James Bliss, Technical Sales Manager, New Technology CAD/CAM

- Hardware requirements, large modelling capabilities and cost
- Implementation and training
- Integrating existing 2D data into a 3D environment

10:40

NETWORKING REFRESHMENT BREAK

11:00

DEVELOPMENTS IN APPLICATIONS FOR LASER SCAN DATA

Andy Davis, Geomatics Manager, and Carl Brookes, Director, Ramboll

- Laser Scanning and Laser Aided Modelling
- Current applications and delivery
- Modelling techniques from Laser Scan data
- Project examples

11:30

IMPROVED PROJECT EFFICIENCIES THROUGH 3D MODELLING OF STRUCTURES

Richard Fletcher, Business Development Manager Steel Segment, Tekla

- 3D Modelling for steel frames – move from traditional 2D detailing to intelligent 3D modelling for manufacture
- Collaboration in Design – bringing together the structural, mechanical and engineering models into one environment virtually, to clash-check, schedule and eliminate errors
- From the screen to the shop floor – CAD to CAM, driving robotic fabrication machines with the model data
- Models in the Field – tablet based platforms with cloud stored models further the use of the model into the field

12:00

Q&A PANEL SESSION

An opportunity to ask any questions or make any comments to the morning's presenters.

12:30

NETWORKING LUNCH

13:30

3D RAPID PROTOTYPING FOR CONCEPT DEMONSTRATION AND PHYSICAL TESTING

Richard Farnish, Chief Consulting Engineer, The Wolfson Centre for Bulk Solids Handling Technology

- Nothing beats a scale model for clarity in communicating a design to a project sponsor
- Now they can be made quickly and cheaply from a CAD model, using 3D-printing
- They can also be used for demonstrating flow and reclaim patterns
- Some case studies will be shown and demonstrated both for layout representation and physical demonstration of flow

14:00	<p>IN HOUSE DEVELOPMENT OF INTEGRATED ANALYTICAL TECHNIQUES FOR INNOVATIVE CHUTE DESIGN John Fuller, CEO, Leading Systems Ltd</p> <ul style="list-style-type: none"> • Developing in house analytical techniques • Using Discrete Element Modelling (DEM) to support integrated analytical techniques • Creating and testing models to enhance the existing marketing platform
14:30	NETWORKING REFRESHMENT BREAK
15:00	<p>CASE STUDY: MAKING THE MOST OF 3D MODELLING IN BULK MATERIALS HANDLING Speaker to be confirmed</p>
15:20	<p>OVERVIEW AND EXAMPLES OF ENGINEERING SIMULATION John Dennis, Technical Director, Wilde Analysis</p> <ul style="list-style-type: none"> • An overview of the application of established simulation techniques including finite element analysis with real world examples. • A review of other simulation tools such as Computational Fluid Dynamics (CFD) and the relatively new Discrete Element Modelling (DEM) and Material Point Method (MPM)
15:50	<p>CASE STUDY: 3D - LUXURY OR NECESSITY? Peter Guttridge, Chairman, Guttridge</p> <ul style="list-style-type: none"> • Implementation and day-to-day use of 'Autodesk Inventor' • Resources and training approaches used • Costs versus benefits: new product development story
16:10	<p>VISUALISATION: NOT JUST A SALES TOOL Demir Ali, Technical Specialist, Autodesk</p> <ul style="list-style-type: none"> • Using visuals are part of your day-to-day work • Types of visualisation • Visualisation examples
16:40	<p>FINAL QUESTION AND ANSWER SESSION A final opportunity to ask any questions to the afternoon's presenters or to make comments to the chair regarding any of the presentations.</p>
16:50	CHAIR'S CLOSING REMARKS
17:00	END OF SEMINAR

Find out more about our speakers at www.imeche.org/CAE-BULK

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

Organising committee:

Bulk Materials Handling Committee, The Institution of Mechanical Engineers

- Graham Leason
- Eddie McGee
- Andrew Archer
- Mike Bradley
- John Pethullis

SPEAKERS AND CONTRIBUTORS

GRAHAM LEASON CHAIR BULK MATERIALS HANDLING COMMITTEE, INSTITUTION OF MECHANICAL ENGINEERS

Graham Leason has 44 years in a variety of engineering industries including 32 years in bulk materials handling. Currently running his own consultancy business providing engineering advice and assistance specialising in bulk materials handling. An Honours graduate in mechanical engineering and a Fellow of the IMechE. His bulk materials handling design experience has been in a broad range of industries including open pit and underground mining plant, long overland high powered conveyors, sand and gravel plants, coal handling, domestic waste and biomass handling facilities. He is immediate past chairman of the Institution of Mechanical Engineers bulk materials handling committee, Vice Chair of the IMechE process board, sits on the BSI – MHE/9 Committee and is a member of Material Handling Engineers Association.

DEMIR ALI TECHNICAL SPECIALIST, AUTODESK

Demir Ali is a technical specialist within the manufacturing division of Autodesk. Based in the UK he has been responsible for driving the successful adoption of the Autodesk digital prototyping solutions into manufacturing organisations across a wide variety of industries. These companies range from mechanical design service providers to multi-national engineering firms, each having their own diverse challenges requiring a unique problem resolution. Starting out as a design engineer using AutoCAD R12 DOS, he has over 20 years of experience in both engineering and working within the software sector, spending 11 years working as a trainer and application specialist for the Autodesk manufacturing product line.

JOHN FULLER CEO, LEADING SYSTEMS LTD

John Fuller is CEO of Leading Solutions Ltd, a solutions partner. He is currently developing a range of game changing products for LoadFast Systems, a global materials handling supplier, where he is also a founder. His wide experience includes Automotive, Biotech, Ship building, Drinks, Construction, Internet and global Manufacturing. John has extensive experience in using design tools to get right first time products to market rapidly across all sectors. For LoadFast Systems he has developed an in-house process creating greater than fifty percent reduction in lead times over the best in market.

RICHARD FLETCHER BUSINESS DEVELOPMENT MANAGER STEEL SEGMENT, TEKLA

Richard Fletcher graduated from the University of Leeds in 1996 with his degree in Chemical Engineering. A keen interest in CAD led him to gain employment at a structural steel fabricator in the engineering office where, in 1997, he was key to the implementation of the company's venture into 3D modelling software. Richard has experience in different types of 3D modelling software including detailing for fabrication, estimating, site planning and procurement. Richard moved to Teklar in 2013 and his current role involves the implementation of structural design software for new customers who wish to develop their processes in the digital age.

RICHARD FARNISH CHIEF CONSULTING ENGINEER, THE WOLFSON CENTRE FOR BULK SOLIDS HANDLING TECHNOLOGY

Richard Farnish has been a key member of The Wolfson Centre for Bulk Solids Handling Technology since January 1996. He has generated substantial consultancy income, in conjunction with support of the School of Engineering, in the delivery of final year degree subjects and to the School of Science for MSc students. Richard teaches the science of and technologies for handling powders and granular materials in the process industry sector. Richard teaches a large number of industrial short courses. Over the past 10 years, Richard has written 79 articles for trade journals, delivered 31 presentations at conferences and seminars and co-authored 40 conference papers. Guest lectures have also been given at universities and institutes in Europe and North America.

SPEAKERS AND CONTRIBUTORS

JAMES BLISS

TECHNICAL SALES MANAGER, NEW TECHNOLOGY CAD/CAM

James Bliss is a Technical Sales Manager for New Technology CAD/CAM Ltd. He holds an honours degree in Industrial & Product Design, with 11 years' experience within industry, software and associated technologies. He is focused on providing integrated CAD/CAM systems to industry that allow its users to realise their true potential, enabling them to create innovative, necessary and successful products that reach their target market faster, whilst remaining sustainable and environmentally aware.

ALAN COLES

TECHNICAL DIRECTOR, DASSAULT SYSTEMES SOLIDWORKS

Alan Coles is Technical Manager for Dassault Systemes SOLIDWORKS. He holds a First-class honours degree in Mechanical Engineering, with twelve years' experience split between positions in industry and software. Alan's role is to develop the SOLIDWORKS portfolio by working closely with re-sellers and customers alike.

ANDY DAVIS

ASSOCIATE, RAMBOLL ADVANCED ENGINEERING AND GEOMATICS

Andy Davis has over 35 years of experience in the Construction Industry and has been involved in a large range of projects. Andy's current role gives him the responsibility to lead and develop the Geomatics Team with regard to Laser Scanning and Laser Aided Manufacturing (LAM). He is involved in managing projects across disciplines and design teams, developing surveying and modelling approach and protocols to suit the projects' expectations and the appropriateness of surveying methods to suit the project. Andy is part of the UK Integrated Business Technology Network and leads BIM for the AEG discipline.

CARL BROOKES

DIRECTOR, RAMBOLL ADVANCED ENGINEERING AND GEOMATICS

Carl Brookes leads the Advanced Engineering and Geomatics (AEG) Team at Ramboll UK. He has 30 years' experience in the construction industry, and has been responsible for a wide range of challenging engineering projects working with many disciplines. He is expert in performance based design and assessment techniques and in particular the simulation of structures and their environments. Carl currently represents the construction industry on the NAFEMS (International Association for the Engineering Modelling, Analysis and Simulation Community) UK Steering Group.

JOHN DENNIS

TECHNICAL DIRECTOR, WILDE ANALYSIS

John Dennis completed a graduate apprenticeship with the GEC group gaining early experience with diesel engines, gas turbines and turbochargers. After graduating he commenced employment with that company performing stress analysis work on engine components using finite element analysis.

He subsequently spent periods within the motor industry at MIRA and the nuclear industry at NNC with his main activities revolving around structural mechanics and CAE techniques. John has spent almost 40 years in a mechanical, structural, and stress analysis environment using both computer based and traditional methods of engineering analysis and design. He has worked at Wilde Analysis Ltd for the last 29 years.

PETER GUTTRIDGE

CHAIRMAN, GUTTRIDGE

Peter Guttridge is an engineering graduate from Cambridge University. From a strong practical engineering background, Peter set about improving manufacturing capabilities to support growing interests in bulk materials handling machinery. During the 1990s Peter introduced new product ranges, taking the company into food processing markets. He has overseen the use of 3D modelling to develop Guttridge's materials handling products which has helped to increase sales to the Middle East, Eastern Europe and North Africa.

BOOKING FORM

EVENT CODE: S6258AB

**COMPUTER AIDED ENGINEERING
FOR BULK MATERIALS HANDLING**
24 September 2015
London

REGISTRATION Please complete in capitals.

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 News and updates from the Institution
 Services and offers from our preferred partners

FEES AND CHARGES Please complete the appropriate box.

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

	EARLY BIRD RATE Until 24 July 2015	STANDARD RATE	TOTAL
Member, Institution of Mechanical Engineers	£252.45+VAT	£297.00+VAT	£
Member, supporting organisation	£252.45+VAT	£297.00+VAT	£
Non-member	£317.69+VAT	£373.75+VAT	£
Student/retired	£79.48+VAT	£93.50+VAT	£
Invoice charging (if applicable)	£10.00+VAT	£10.00+VAT	£

PAYMENT DETAILS

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

PLEASE INDICATE METHOD OF PAYMENT:

- Cheque** Cheques should be made payable to IMechE and crossed. Please note international delegates may pay only 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**
Card type: Visa MasterCard (please note we cannot accept American Express, Diners Club or Maestro)
Card No _____ Valid From _____ / _____ Expiry Date _____ / _____
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Amount to be Deducted _____ Signature _____
- BACS** BACS bank transfers can be made to:
IMechE Current Account, NatWest Charing Cross Branch.
Sort Code: **60-40-05** Acc No: **00817767**
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A copy of the draft must accompany this form.
- Invoice (UK residents only)** Delegates 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.
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- 5 Fax:
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Please read the information listed below as each booking is subject to the Institution's standard terms and conditions.

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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.

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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.

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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.

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7 October 2015
London

KEY TECHNICAL CHALLENGES OF AMP6: IMPLEMENTING TOTEX

This event will focus on the technical challenges that will arise from the new total expenditure (TOTEX) environment; what type of solutions are being sought and how the supply chain will be engaged to provide them.

www.imeche.org/events/S6254

INFORMATION AND BOOKINGS

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4-5 November
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OFFSHORE ENGINEERING 2015

Offshore Engineering 2015 will feature dedicated streams, led by technical experts, that will offer insight into current challenges as well as solutions to enhance the performance of the offshore industry.

www.imeche.org/events/C6251



ANNUAL DINNER 2015

19 November
London

INSTITUTION OF MECHANICAL ENGINEERS' ANNUAL DINNER

The Institution's Annual Dinner will be returning to London's Dorchester hotel, to celebrate the engineering profession.

www.imeche.org/events/AD6237

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