MECHANICAL SEALING TECHNOLOGY 2016:
SAFE AND RELIABLE MECHANICAL SEALING SYSTEMS FOR ROTATING MACHINERY

Organised by

Institution of MECHANICAL ENGINEERS

13 April 2016
Institution of Mechanical Engineers,
1 Birdcage Walk, London, SW1H 9JJ

More details available at
events.imeche.org/mechanicalsealing

KEY SPEAKERS INCLUDE:

Professor Richard F. Salant, **Georgia Institute of Technology**

Henri Azibert, Technical Director, **Fluid Sealing Association**

Peter Haselbacher, Senior Applications Engineer, **EagleBurgmann**

Klaus-Dieter Meck Dipl.-Ing: Core Technology Manager, Global R&D, **John Crane Global**

Dr Chris Radcliffe CEng. MIMechE: Chief Mechanical Engineer, **Sulzer Pumps UK**

Fluid Machinery Group
Seminar

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EXHIBITOR

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Precision Polymer Engineering

WHY YOU SHOULD BE THERE

13 April 2016
Institution of Mechanical Engineers, London

THIS UNIQUE, TECHNICALLY FOCUSED SEMINAR, ORGANISED ONCE AGAIN BY THE INSTITUTION OF MECHANICAL ENGINEERS, RETURNS TO ADDRESS A WIDE RANGE OF ISSUES FOR FLUID MACHINERY MECHANICAL SEALING ISSUES IN THE OIL, GAS, CHEMICAL AND UTILITY SECTORS

The Mechanical Sealing Technology Seminar takes place at the Institution of Mechanical Engineers bringing together the entire industry to discuss seal development, codes, users experience, safety, environmental issues and international standards.

Attendees will also gain experience from existing engineers to feed back into design of new and upgraded sealing systems.

The technical content will include examples of failures on existing plants and solutions implemented, latest activities for seal improvements and future design trends, methods being used for predictive maintenance and condition monitoring of seal faces, relevant design codes and impact of legislation relating to plant design and operation.

100+ attendees from across the oil, gas, chemical and utility sectors are expected to attend this one-day seminar. Don't miss out - book by 26 February 2016 to take advantage of the Early Bird offer.

WHO SHOULD ATTEND?

- Chief engineers
- Engineering managers
- Developing engineers
- Rotating equipment engineers
- Senior project engineers
- R&D managers
- Academics

ATTEND THIS SEMINAR TO:

- **Discover** first-hand briefings on new developments and products
- **Increase** your knowledge of existing operational issues
- **Identify** the newest seal maintenance and reliability solutions
- **Enhance** user experience of introducing seal upgrades & operating experience
- **Hear** from existing engineers to feed back into design of new and upgraded sealing systems
- **Network** with your colleagues and peers from across the entire industry

KEY SPEAKERS INCLUDE:

- Professor Richard F. Salant, **Georgia Institute of Technology**
- Henri Azibert, Technical Director, **Fluid Sealing Association**
- Peter Haselbacher, Senior Applications Engineer, **EagleBurgmann**
- Klaus-Dieter Meck Dipl.-Ing: Core Technology Manager, Global R&D, **John Crane Global**
- Dr Chris Radcliffe CEng. MIMechE: Chief Mechanical Engineer, **Sulzer Pumps UK**

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PROGRAMME

WEDNESDAY 13 APRIL 2016

08:30 REGISTRATION AND REFRESHMENTS

09:00 CHAIR'S OPENING REMARKS
John Middleton, Rotating Machinery Engineer, Member of the Institution of Mechanical Engineers Fluid Machinery Group

SEAL INNOVATION

09:10 ELECTRO-HYDRAULICALLY CONTROLLED MECHANICAL SEAL: MOTIVATION, SIMULATION, AND PRACTICAL CHALLENGES
Professor Richard F. Salant, Georgia Institute of Technology
- Corrects excessive or insufficient leakage through nuclear reactor coolant pump seals
- Coning of non-rotating carbon seal face determines lubricating film thickness and leakage rate
- Coning is varied by varying pressure of fluid in internal cavities of carbon seal face

09:40 SEAL FACE FRICTIONAL PERFORMANCE ENHANCEMENT USING CARBON NANOSPECIES DERIVED FROM CARBIDES
Mark P. Slivinski, President and Founder Carbide Derivative Technologies, Inc.
- Background of the technology and microstructure details
- Results of mechanical seal performance demonstrations
- Conclusions and recommendations regarding positive impact on equipment reliability, MTBF, MTBM

10:10 PREDICTIVE DIAGNOSTICS FOR MECHANICAL SEALS
David Unsworth BSc Hons, Condition Monitoring Manager, John Crane Global R&D
John Morton MBA IEng MIIE, Senior Product Manager, John Crane Global
Klaus-Dieter Meck Dipl.-Ing., Core Technology Manager, Global R&D, John Crane
- Turning data into actionable information - minimise unplanned downtime to keep operations up and running
- Early fault detection - unique acoustic emission technology detects friction and wear
- Automatic fault classification - system predicts future failures and helps to identify root causes

10:40 NETWORKING REFRESHMENT BREAK

SEALING SOLUTIONS

11:10 SAFE SEALING SOLUTION FOR HIGH VAPOUR PRESSURE, FLASHING HYDROCARBON PUMP APPLICATIONS
Jim O'Hare, Applications Engineer EagleBurgmann, Germany

11:40 MECHANICAL SEAL PRECISION FACE TOPOGRAPHY REDUCES PUMP START-UP AND RUNNING TORQUE
Authors: Alvaro Medina, Applications Engineer, Flowserve United Kingdom, Aurelio Olivet, Quick Response Centre Manager, Flowserve United Kingdom
- Solving of startup problems in small pumps due to high torque in the seal
- Decrease of friction between faces and increase of face load support
- Application of technology in a real field application after development and testing in laboratory

12:10 THE DESIGN AND CONSTRUCTION OF RELIABLE AND MAINTAINABLE LARGE SEMI/FULL-SPLIT MECHANICAL SEALS
Peter Haselbacher, Senior Applications Engineer, EagleBurgmann
- Operational reliability by mode of operation to be implemented (all features that can increase relatability even in case of maloperation)
- Operational reliability by design to be implemented
- Close co-operation with OEM to design and manufacture a maintainable seal in a restricted space
- Judge available space and cut-outs in the housing at first installation and repair

12:40 NETWORKING LUNCH

SEALING SYSTEMS

13:40 REDUCING BARRIER FLUID PRESSURE LEVELS AND FLUCTUATIONS IN DUAL SEAL SYSTEMS
Henri Azibert, Technical Director, Fluid Sealing Association

14:10 MAINTAINING A SAFE AND RELIABLE MECHANICAL SEAL BARRIER PRESSURE WITH VARYING PUMP OPERATING CONDITIONS
Authors: Samuel Eccles BEng MBA, Global Product Manager Multistage Machines, SPX Pumps, Stephen Harris BEng, Senior Mechanical Engineer, SPX Pumps

14:40 SECONDARY CONTAINMENT SEAL SELECTION FOR INCREASED PLANT SAFETY AND RELIABILITY
Kamesh Narayanaswamy, Senior Engineer Special Applications, John Crane
- Secondary containment sealing techniques and design characteristics
- Guidelines for selecting containments seal and the associated support systems included in API 682 4th edition
- Performance of secondary containment seals in laboratory testing and specific user experiences

15:10 NETWORKING REFRESHMENT BREAK

	SEALING CHALLENGES
15:40	**DRY GAS SEAL AND SEAL GAS SYSTEM, A PARTNERSHIP FOR RELIABLE OPERATION** **Authors: Michael Schiller, Principal Engineer Flowserve Compressor Seal Technology, Detlev Steinmann, Head of Compressor Seal Engineering Worldwide, Flowserve** • Most frequent causes of Dry Gas Seal failures • Failure modes and consequences • Possible upgrades on system and seals and procedures to achieve reliable operation
16:10	**MECHANICAL SEALS - A PUMP MANUFACTURER'S EXPERIENCES** **Dr Chris Radcliffe CEng. MIMechE, Chief Mechanical Engineer, Sulzer Pumps Leeds** • Mechanical seal designs are based on certain ideal situations but in practice the real conditions installed in the pump can be less than ideal, leading to operational problems • Shaft dynamic movements can lead to increased seal leakage or even total failure • Transient operating conditions may have thermal and hydraulic influence over the seal's operation
16:10	**DRY GAS SEALING SOLUTIONS FOR HIGH PRESSURE COMPRESSOR APPLICATIONS - AN OPERATOR'S EXPERIENCE** **Authors: Ken Tacon, Former Rotating Equipment Advisor, BP Exploration Operating Company Ltd,** **Vugar Mammadov, Rotating Equipment Engineer, BP Exploration Caspian Sea Ltd,** **Colin Twiss, Rotating Equipment Engineer, BP Exploration Caspian Sea Ltd,** **Farhad Aslan-zada, Mechanical Engineering Team Leader, BP Exploration Caspian Sea Ltd,**
17:10	**CHAIR'S CLOSING REMARKS**
17:20	**END OF SEMINAR**

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

ORGANISING COMMITTEE

Fluid Machinery Group, Institution of Mechanical Engineers

Members Credits:
John Middleton, Rotating Machinery Engineer, Member of the Institution of Mechanical Engineers Fluid Machinery Group

SPEAKERS

PROFESSOR RICHARD F. SALANT,
GEORGIA INSTITUTE OF TECHNOLOGY

Richard F. Salant, Professor Emeritus at the Georgia Institute of Technology, was formerly the Georgia Power Distinguished Professor in Mechanical Engineering, until 2014.

He received his B.S. (1963), M.S. (1963) and Sc.D. (1967) degrees from M.I.T. Prior to joining Georgia Tech in 1987, he was Manager of Fluid Mechanics, Heat Transfer and Turbomachinery Research at the Borg-Warner Research Centre, and held faculty positions at M.I.T. (associate professor, assistant professor) and the University of California, Berkeley (assistant professor).

He was Chair of the Tribology Research Group at Georgia Tech, where his primary research continues in the areas of lip seals and mechanical seals.

Richard Salant is a Fellow of ASME and STLE.

JIM O'HARE,
APPLICATIONS ENGINEER EAGLEBURGMANN, GERMANY

Jim O'Hare is a Compressor Seals Application Engineer with EagleBurgmann, Germany.

Jim has worked in the mechanical seal industry for over 25 years during which he has held positions in application engineering, projects engineering, service contracts and technical sales. Jim joined EagleBurgmann in 2002, and is currently in the position of Application Engineer for the compressor seals department, based in Wolfratshausen, Germany, providing global support for worldwide subsidiaries, OEM's and End Users, in various applications including high pressure, high vapour margin, flashing hydro-carbon applications in pipeline and other services.

PETER HASELBACHER,
SENIOR APPLICATIONS ENGINEER, EAGLEBURGMANN

Peter Haselbacher is the Senior Applications Engineer at EagleBurgmann for the Global Application Engineering and Sales Support for the Water Industries.

Peter joined EagleBurgmann in 1981 after completing a mechanical engineering degree at Munich University.

During his 33 year career he has held many different international positions within EagleBurgmann and has been the co-inventor of various patented seal designs.

HENRI AZIBERT,
TECHNICAL DIRECTOR, FLUID SEALING ASSOCIATION

Henri V. Azibert started his career as counsel for the State Rating Bureau for the Division of Insurance for the Commonwealth of Massachusetts. He then joined the A.W. Chesterton Company, with his most recent position being Chief Technology Officer, where he had responsibility for all the mechanical seal and mechanical packing engineering staff and product lines.

He is now retained as the Technical Director for the Fluid Sealing Association. He received his Baccalauréat from Lycée Louis Le Grand, a B.A. in Political Science from the University of Massachusetts, a Jurisprudence Doctor degree from Boston College, and a Masters degree in Mechanical engineering from Northeastern University.

Mr. Azibert was granted over thirty patents on mechanical seal designs and improvements. Mr. Azibert maintains his standing in the Massachusetts Bar. He is a member of the API 682 and 3A Mechanical Seal Standard Task forces, has been a member of the Texas A&M Pump Symposium Advisory Board; he has chaired several committees for the Fluid Sealing Association and served as Vice-President.

KAMESH NARAYANASWAMY,
SENIOR ENGINEER SPECIAL APPLICATIONS, JOHN CRANE

Kamesh Narayanaswamy is a senior engineer at John Crane. Based in Manchester, United

Kingdom Mr. Narayanaswamy is responsible for application and product support for wet seals products. He started his career at John Crane's India business working in product design standards. He underwent John Crane's two-year Graduate Training Program (GET) in the UK, which is been designed to offer formal training and work experience in application engineering. Prior to his current role, Mr. Narayanaswamy was an application engineering manager based in India.

Mr. Narayanaswamy earned a B.S. degree in engineering technology from Birla Institute of Technology and Science (BITS) at Pilani, Rajasthan, India.

SPEAKERS

DR CHRIS RADCLIFFE CENG. MIMECHE,
CHIEF MECHANICAL ENGINEER, SULZER PUMPS LEEDS

Dr Chris Radcliffe is the Chief Mechanical Engineer at Sulzer Pumps UK, overseeing pump performance testing and is responsible for issues which may arise and resolution of operational problems.

Dr Radcliffe started his career as a technical apprentice at British Aerospace, Brough and studied for a BSc in Aeronautical Engineering. He then moved to Leeds University to study Machine Tribology, gaining a doctorate in Piston Ring Lubrication, followed by 11 years as head of R&D with the Universal Metallic Packing Company (later part of Hoerbiger Compression Technology).

In 2007 Dr Radcliffe joined Sulzer Pumps in Leeds. He has a number of patents for compressor seals and improvements in multiphase pumps.

MARK P. SLIVINSKI,
PRESIDENT AND FOUNDER CARBIDE DERIVATIVE TECHNOLOGIES, INC.

Mark Slivinski has 39 years of product development experience, in mechanical seals, guided missiles, electrical circuit protection and heavy duty transportation. He has served in roles of increasing responsibility including Engineering Department Manager for Hughes Aircraft, Vice President of Global Technology for John Crane International, Director of New Product Development for Littelfuse, Vice President of Engineering for AlliedSignal/Bendix Truck Braking Systems and Engineering Fellow for Raytheon.

Recently, he has founded Carbide Derivative Technologies, Inc., to introduce Industry to a unique surfacing technology for Carbides, which reduces friction and virtually eliminates the leading cause of premature wearout, and dramatically increases running life, in frictional components such as mechanical seals and bearings.

DAVID UNSWORTH BSC HONS,
CONDITION MONITORING MANAGER, JOHN CRANE GLOBAL R&D

David Unsworth is the Condition Monitoring Manager for John Crane Global R&D. David joined John Crane in 2007 after many years in the defence industry working as a research scientist. His skills and experience have focused on electro-mechanical systems design and development and software engineering. He has led the development of several systems for John Crane in the field of condition monitoring and has a 1st class degree in Computer Science from Glasgow Caledonian University.

JOHN MORTON MBA IENG MIIE
SENIOR PRODUCT MANAGER, JOHN CRANE GLOBAL

John is presently the Senior Product Manager for John Crane Global. He joined John Crane in 1982 and spent many years in engineering, product development and support before moving into a commercial role with responsibility for the Danish and Norwegian markets. He later moved into marketing and product management, having responsibility for the pump seal, packing and predictive diagnostics product lines. He has authored several papers on mechanical seals and sealing technology and obtained his MBA from the University of Reading.

KLAUS-DIETER MECK DIPL.-ING.,
CORE TECHNOLOGY MANAGER, GLOBAL R&D, JOHN CRANE

Klaus-Dieter Meck is the Core Technology Manager for John Crane Global R&D. Klaus-Dieter joined John Crane in 1999 after working several years at Flexibox Ltd. During his over 20 years in the oil and gas industry, he has been involved in technology, product development and product application of mechanical seals, bearings and power transmission products. He is the author of several papers concerning sealing technology and rotating equipment and has a Master's degree in mechanical engineering from Stuttgart University, Germany.

BOOKING FORM

EVENT CODE: S6334

EARLY BIRD ENDS 26 FEBRUARY 2016

MECHANICAL SEALING TECHNOLOGY 2016: SAFE AND RELIABLE MECHANICAL SEALING SYSTEMS FOR ROTATING MACHINERY

13 April 2016
Institution of Mechanical Engineers, London
events.imeche.org/mechanicalsealing

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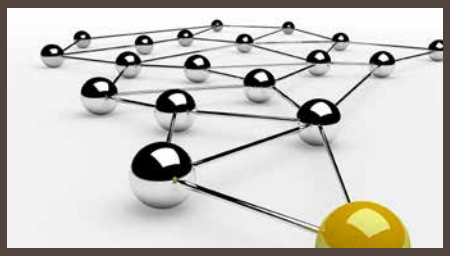

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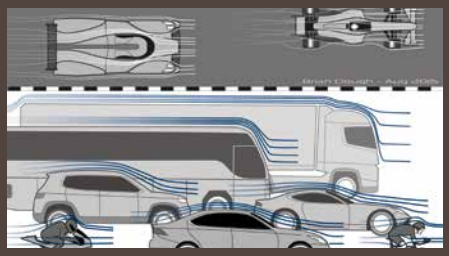

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