ASME BJRS 2024

Bolted Joint Reliability Symposium

Program

COURSE
OCT. 21–22, 2024

CONFERENCE & EXHIBITION
OCT. 23–24, 2024

Norris Conference Center
Houston, TX

https://event.asme.org/BJRS

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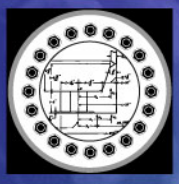

BJRS 2024
Bolted Joint Reliability Symposium

BOLTED JOINT RELIABILITY SYMPOSIUM (BJRS2024)

ADVANCES IN SEALING TECHNOLOGY

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Contents

Welcome

ASME BJRS2024 TECHNICAL PROGRAM COMMITTEE

Hakim A. Bouzid, Chairman

Welcome to Houston for the 2024 ASME Bolted Joint Reliability Symposium! The ASME PVP Bolted Joint Reliability Symposium (BJRS) promotes knowledge sharing, technological progress and international co-operation for advancing sealing technology for the oil and gas, aeronautical, automotive and nuclear industries. The presentations disseminate the scientific and real-world knowledge in the area of sealing, including current and future design rules for bolted flange connections based on tightness (ASME SWG-BJ, EN1591), modern flange assembly guidelines and best practices (ASME PCC-1), gasket selection and assembly for obtaining desired performance/reliability (Example LDAR), and sharing of Lessons-Learned and Best Practices of critical applications including hydrogen technology.

The ASME Pressure Vessels and Piping Division is the primary sponsor of this Symposium. This year, under the theme “Advances in Sealing Technology,” the symposium has attracted 16+ presentations. In addition, the ASME learning department is organizing a special two-days ASME course on Bolted Joints and Gasket Behavior given by Jack Hawkins. The two-days symposium will start with a Plenary Session feature keynote presentation each day by expert speakers Robbie Riggs from Teadit North America and Anita Bausman from VSP technologies. A workshop on Flange tightness-based design is given by Hakim A. Bouzid from ETS.

Technical presentations presented at this symposium are separated into sessions according to their technical areas. Since fewer and fewer computers allow for playing CD-ROMs and many companies discourage the use of USB memory sticks, we chose to make technical presentations available to preregistered attendees in the link sent to their emails.

On behalf of the ASME staff, the PVP Division Leadership Team, the BJRS organizing committee and myself, the symposium chair, we would like to extend our sincere gratitude to all Contributing presenters, Reviewers, Session Organizers and Session Chairs, our ASME Conference and Events Manager, Kimberly Micelli, ASME TEC Operations Manager, Jamie Hart, and our ASME Publishing & WebTool Coordinator, Stacey Cooper. Without their contributions and assistance, we would not have been able to achieve the success of the BJRS2024. Finally, we would also like to recognize our financial sponsors for their generosity. Their contributions are greatly appreciated. I sincerely hope that you enjoy the technical presentations, discussions, exhibits and social program, and that you find your participation in BJRS2024 to be very worthwhile.

Hakim A. Bouzid

Symposium Chair

SYMPOSIUM ORGANIZING COMMITTEE

Anita Bausman

Session 1.2: Gaskets and Hydrogen Leak Testing – Session Chair

Session 2.1: Special Applications and Evaluations – Session Chair

Session 2.2: Workshop on PVRC BFC Graphical Method – Session Organizer

Hakim A. Bouzid

PVPD senate and Symposium Chair

Session 1.1: Joining and Fastening – Session chair

Hubert Lejeune

PVPD International Coordinator

Session 1.3: International Panel Session on Hydrogen Sealing – Session Chair

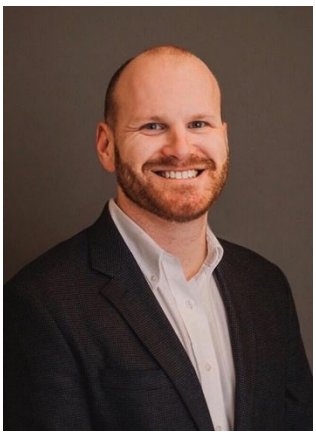
Session 2.3: Gasketed Joint Leakage – Session Chair

Plenary Sessions and Workshop

Advances in Sealing Technology

The Symposium opens in Magnolia, Norris Conference Center, on Wednesday, October 23th 2024 at 8:45 AM. Representatives of the American Society of Mechanical Engineers will welcome the attendees. The first plenary technical presentation will be delivered on Wednesday October 23th 2024 at 9:00 AM by Robbie Riggs, P.E. Senior Consultant, Inertech, Inc, USA. The second plenary technical presentation will be delivered on Thursday October, 24th 2024 at 9:00 AM by Anita Bausman, P.E. Senior Applications Engineer, VSP Technologies, USA. The workshop will be held on Thursday October, 24th 2024 at 13:15 PM and given by Dr. Hakim Bouzid, Professor and Director of the Static and Dynamic Sealing Laboratory, Ecole de Technology Supérieure, Canada.

Plenary I: Understanding the Complexities of Sealing in a New Energy Era



Robbie Riggs
President & CEO
Teadit North America, TX, United States

This presentation explores the importance of managing fugitive emissions, with a focus on hydrogen as a clean energy source. While sealing can have many challenges in several applications, it is particularly important to ensure that when sealing a small molecule such as hydrogen, these challenges are explored and addressed.

Fugitive emissions will first be explored including definition and importance. What we currently know about fugitive emissions and controlling them will also be explained in detail. In our current energy climate, it is important to also discuss alternative energy sources in combination with fugitive emissions, to ensure a comprehensive understanding of a new energy era.

While hydrogen does not produce CO2 during energy conversion, leaks would pose safety and environmental risks. Despite being the lightest and most abundant element in the universe, hydrogen has a surprisingly high global warming potential when it leaks into the atmosphere. Even small amounts of hydrogen can contribute to the greenhouse effect, which underscores the importance of stringent containment measures. This presentation will discuss the challenges of sealing hydrogen, including its small molecular size, high permeability, and the difficulty of detecting leaks. The session will also address the complexities involved in sealing hydrogen in various applications, especially electrolysers.

Safety implications of hydrogen leaks is another point that will be addressed, as hydrogen's low density causes it to rise, posing a significant risk in confined spaces. Hydrogen is also difficult to detect, as it lacks odor and color.

Traditional sealing materials and methods often fall short when dealing with hydrogen, making it essential to develop specialized solutions. In conclusion, the safe and effective use of hydrogen as a clean energy source depends on specialized sealing expertise, in combination with a focus on reducing fugitive emissions from other sources. Ensuring that hydrogen is properly contained, and leaks are minimized is crucial for realizing its full potential in a sustainable energy future.

Bio: Robbie Riggs serves as the President and CEO of Teadit North America, located in Pasadena, TX. With a robust background as a degreed engineer, he has over 20 years of experience in the oil & gas and chemical process industries. He holds several patents for innovative sealing solutions, reflecting his commitment to addressing complex industry challenges. Over the past six years, Robbie has been a driving force behind the company's growth, leading strategic initiatives that have enhanced Teadit's market position. Robbie's leadership emphasizes continuous improvement and collaboration, fostering an environment that encourages creativity and innovation. His forward-thinking approach has introduced new technologies and processes, further solidifying Teadit's reputation for excellence. Beyond his role at Teadit, Robbie is active in industry associations, regularly participating in conferences and forums to share his expertise and stay updated on emerging trends. He is also dedicated to mentoring the next generation of engineers, helping shape the future of the industry.

Plenary II: Exploring the behavior of Expanded PTFE Gasket Material Performance Variation Comparing Solid to Jointed Constructions including Hot Blowout Thermal Cycling Testing

Anita Bausman
P.E. Senior Applications Engineer,
VSP Technologies.
Kingsport, TN, United States

Polytetrafluoroethylene (PTFE) is an excellent gasket material. Expanded PTFE (ePTFE) achieves better mechanical performance compared to plain PTFE by a highly fibrillated microstructure. However, between the fibers of the ePTFE, there are air voids. To achieve superior sealing, the microstructure must be adequately compressed to close these voids and reduce permeation leakage through the material's microstructure. During this compression, the ePTFE dimensions shrink in contrast to most PTFE sheet materials that radially expand when compressed.

This ePTFE behavior is problematic where a gasket with a joint is needed, for example on industrial column body flanges larger than available ePTFE sheets.
The ASTM WK61856 Hot Blowout Thermal Cycling (HOBTC) test is in the final stages of ASTM approval. This test has evolved into an excellent judge of PTFE-based sheet materials' mechanical performance. A working understanding of the HOBTC test results helps an end user select the right PTFE material for their application and optimize plant procedures. ePTFE sheet materials are currently the leading competitors of the PTFE group as far as mechanical performance is concerned. However, the microstructure that gives ePTFE its mechanical advantage over conventional PTFE also poses problems where a jointed construction is needed. Care must be taken to make a leak-free ePTFE joint on such gaskets.
Industry experience with the common dovetail joint has been poor using ePTFE materials. However, joints are sometimes needed. In ASME PVP2024-122810, the authors investigated the leakage and mechanical performance of ePTFEs as solid rings without joints, industry-standard dovetail jointed rings, and Engineered Interference Tortuous Path (EITP) jointed rings. Leakage performance was evaluated according to the EN13555 leakage test at room temperature. This presentation reviews the use of HOBTC test results to evaluate PTFE-type sheet gaskets and extends ASME PVP2024-122810 by completing the HOBTC testing on solid and selected jointed ePTFE ring gaskets. Lab tests were performed on an amtec TEMES fl.ai1 test fixture at the authors' company.

Bio: Anita Bausman is a 1985 graduate of the Georgia Institute of Technology and is a registered Professional Engineer in TN, VA, PA, and SC. She spent the first two decades of her career with Eastman Chemical Company in a variety of plant and piping engineering roles, most notably serving as the Gasket and Piping subject matter expert. Anita joined VSP Technologies in 2009 and is a Senior Applications Engineer working out of VSP's Tennessee Regional Office in Kingsport. She currently serves on the ASME RTP Design Subcommittee (low-pressure nonmetallic vessels) and ASME NPPS Design Task Group (non-metallic pressure piping). Anita is a member of the ASTM F03 technical committee on gaskets and was heavily involved in the development of the Hot Blowout Thermal Cycling test for PTFE gasket materials. Ms. Bausman has been a frequent contributor to ASME technical organizations and conferences and has authored several papers for the ASME Pressure Vessel & Piping (PVP) conferences and presentations for the ASME Bolted Joint Reliability Symposiums (BJRS).

Workshop: On Flange Design Based on Tightness: A Graphical Method

Hakim A. Bouzid,
Ph.D, ASME fellow,
Professor, Ecole de Technologie Supérieure
Montreal, Qc, Canada

This workshop covers the use of a graphical method to design bolted flange connections based on the new gasket constants Gb, a and Gs. The workshop starts by describing the main changes that are being adopted by the ASME SWG on Bolted

Flange Connection. The new rules parallel those currently in use in Appendix 2 method A based on m & y and method B based on new gasket constants Gb, a and Gs, the consideration given to gasket degradation and relaxation, The tightness concept and its relation to leakage, the importance of tightness and gasket stress, external Loads, gasket temperature limits, assembly efficiency and bolt spacing are to name a few.

It then explains the basic concept of tightness and introduced the tightness classes and their corresponding level of leakage. The ROTT ROom Temperature Tightness test and the procedure to obtain the new gasket constant Gb, a and Gs are briefly described. The correlation between leak rates of gases and liquids follows. Examples are given to correlate between helium used as a reference gas and other gases and liquids, gasket prorating and the correspondence between leakage and tightness classes and vis-versa.

A new bolt load design calculation method based on a graphical approach is treated with examples on different flange sizes, fluid media and operating conditions. The use of the new gasket constants to design bolted flange connections based on a tightness criterion will therefore be made simple and accessible to the designer, end user and application engineer.

Bio: Dr. Hakim Bouzid is a full professor at Ecole de Technologie Supérieure of Montreal Canada. He graduated from mechanical engineering Department of Nottingham University, UK, 1981. He holds a master Degree in Tribology from Leeds University, UK in 1982. He has a Ph.D in bolted joints received from École Polytechnique, Montreal, Canada, 1995. He worked in the nuclear industries for 8 years specializing in pressure vessels and piping before joining the Tightness Testing Research Laboratory at Ecole Polytechnique in 1990 as a research scientist. In 2000, he became a professor at Ecole de Technologie Superieure in Montreal. He is currently the director the Static and Dynamic Sealing Laboratory of ÉTS. Prof. Bouzid has authored or co-authored over 250 technical papers on different subjects including stress analysis, bolted joints, valves, polymers and biomechanics.

Dr. Bouzid is a fellow of ASME. He is a member of the Pressure Vessel ad Piping Division Executive committee. He served as a member of the Pressure Vessel Research Council, ASME subworking Group on Bolted Flange Connections, ASME PCC-1 and ASTM F03 committee on gaskets.

ASME COURSES

Bolted Joints and Gasket Behavior

Course Type: In-Person

Product Number: IPPD539

Credits: CEUs: 1.50 | PDHs: 15.00

Understand bolted joint fundamentals and gasketed joint torque factors, bolting patterns, and gasket behavior, tightness, selection and specification.

This course is a two-day in person course being offered in conjunction with the Bolted Joint Reliability Symposium (BJRS). The course commences at 8:30 AM and ends at 5:30 PM (Central Time) on Monday and Tuesday October 21-22th 2024, each day with breaks scheduled throughout.

Bolted and gasketed joints are critical to pressure-containing and industrial systems worldwide. This two-day course is an engineer's guide to bolting and gasket design, selection and installation. It provides an overview of bolted joint fundamentals and focuses on the roles of bolts and gaskets in developing and maintaining leak-tight connections of bolted flange joints, including troubleshooting of existing bolted flange connection.

This course examines how to assess a successful value of bolt load, as well as explains the importance of specifying a tightening procedure. It introduces the subject of PVRC (Pressure Vessel Research Council) leak tightness calculations and presents an overview of current trends and practices to achieve reliable leak-tight bolted joint solutions.

Instructor:
Jack Hawkins, P.E.
Boeing, Michoud
New Orleans, LA, United States

Jack Hawkins, has over 30 years of experience, primarily in technical roles of stress analysis and mechanical design of equipment and components. While employed by engineering service providers, he specialized in stress analysis and code compliance of piping and pressure systems in the petrochemical industry. Jack's piping and pressure vessel work includes fitness-for-service (FFS) assessments of damaged equipment, design by analysis, troubleshooting and analysis of bolted flange joint connections, expansion joint design and analysis, and fire damage assessment of piping and equipment. He has extensive experience in FEA analysis and has performed numerous finite element analyses of bolted connections, with and without gaskets. Jack has served on the LSU (Louisiana State University) Capstone Review panel for over 20 years and as an alumni advisor for multiple LSU mechanical engineering Capstone projects.

ASME BPV Code, Section VIII, Division 1: Pressure Vessel Combo Course

Course Type: In-Person

Product Number: IPPD443

Credits: CEUs: 3.2 | PDHs: 32

Leverage the requirements of Section VIII, Div 1, including design, materials, fabrication, testing and inspection of pressure vessels.

As an engineering professional working with pressure equipment, your success is predicated on a comprehensive understanding of pressure vessel systems before, during, and after installation. This end-to-end learning path covers design, materials, fabrication, examination, and testing requirements found in the current ASME Boiler and Pressure Vessel Code (BPVC), Section VIII, Division 1.

The proper application of the Section VIII, Division 1 Code and insight into industry best practices from this learning path will help pressure equipment engineering professionals to comply with these rules and succeed in achieving the operational, and regulatory goals of their organization. This official ASME learning path is designed to provide attendees with the key considerations, skills, and competencies to excel as a pressure vessel engineering professional.

This official ASME learning path consists of two courses:

1- ASME BPV Code, Section VIII, Division 1: Design and Construction

ASME's BPV Code, Section VIII, Division 1 course is a comprehensive introduction to Code requirements based on the current Section VIII, Div 1 rules for pressure vessel design and construction.

2- Inspection, Repair and Alterations of In-Service Pressure Equipment

Focusing specifically on in-service pressure equipment, this course introduces attendees to the requirements of various codes and standards, and highlights inspection, repairs and alterations of in-service pressure equipment, and in particular, pressure vessels.

Instructor:
Ramesh Tiwari, P.E.
President, CoDesign Engineering, LLC

Ramesh Tiwari, P.E., is an ASME member and a specialist in the areas of pressure vessels, heat exchangers, and storage tanks. He is recognized for his expertise with the ASME Section VIII, Divisions 1 and 2 (pressure vessels), NBIC and API 510 (repair and alteration of pressure vessels), TEMA and API 660 Standards (shell and tube heat exchangers), and API 650 and API 620 Standards (storage tanks). Ramesh holds bachelor's and master's degrees in mechanical engineering and is a registered Professional Engineer in Texas and Maryland.

Ramesh has over 25 years of experience across a variety of projects and disciplines, such as mechanical design of pressure vessels and storage tanks, thermal and mechanical design of shell and tube heat exchangers, fatigue analysis of pressure vessels, fitness-for-service evaluations to assure structural integrity of equipment, and owner's engineer for procurement of pressure vessels and heat exchangers. He is also the editor-in-chief of "Fixed Equipment Newsletter," which is read widely and respected worldwide since 2007.

MONDAY OCTOBER 21, 2024

ASME Course
Bolted Joints and Gasket Behavior: Day 1
Houston, Norris Conference Center, Pecan 8:30 am - 5:30 pm

Course Instructor: Jack Hawkins, *Boeing Michoud, New Orleans, LA, United States*

ASME Course
ASME BPV Code, Section VIII, Division 1, Design and Construction: Day 1
Houston, Norris Conference Center, Elm 8:30 am - 5:30 pm

Course Instructor: Ramesh Tiwari, *CoDesign Engineering, LLC, Houston, TX, United States*

TUESDAY OCTOBER 22, 2024

ASME Course

Bolted Joints and Gasket Behavior: Course Day 2
Houston, Norris Conference Center, Pecan 8:30 am - 5:30 pm

Course Instructor: Jack Hawkins, *Boeing, Michoud, New Orleans, LA, United States*

ASME Course

ASME BPV Code, Section VIII, Division 1, Design and Construction: Day 2
Houston, Norris Conference Center, Elm 8:30 am - 5:30 pm

Course Instructor: Ramesh Tiwari, *CoDesign Engineering, LLC, Houston, TX, United States*

WEDNESDAY OCTOBER 23, 2024

ASME Course

ASME BPV Code, Section VIII, Division 1, Design and Construction:
Day 3 Houston, Norris Conference Center, Elm 8:30 am - 5:30 pm

Course Instructor: Ramesh Tiwari, *CoDesign Engineering, LLC, Houston, TX, United States*

THURSDAY OCTOBER 24, 2024

ASME Course

Inspection, Repair and Alterations of In-Service Pressure Equipment
Houston, Norris Conference Center, Elm 8:30 am - 5:30 pm

Course Instructor: Ramesh Tiwari, *CoDesign Engineering, LLC, Houston, TX, United States*

SYMPOSIUM

WEDNESDAY OCTOBER 23, 2024

Plenary Technical Session I

Plenary Session 1.0: UNDERSTANDING THE COMPLEXITIES OF SEALING IN A NEW ENERGY ERA
Robbie Riggs, *Teadit North America, Pasadena, TX, United States*

Houston, Norris Conference Center, Magnolia 9:00 am - 10:00 am

Technical Session

Session 1.1: JOINING AND FASTENING
Houston, Norris Conference Center, Magnolia 10:30 am - 12:30 pm

Session Organizer: Hakim A. Bouzid, *Ecole de Technologie Supérieure, Montreal, QC, Canada*

Bolt Load Relaxation Behavior of Knurled Faced Washers at Elevated Temperatures
Oral Presentation. BJRS2024-151103
Emmanuel Derillac, Jay Knudsen, *Hytorc, Mahwah, NJ, United States*

The Truth About Double Nutting
Oral Presentation. BJRS2024-151110
Brett Thibodeaux, *Citgo Petroleum, Iowa, LA, United States*

A Simple Method for Calculating Accurate Gasket Stresses for Octagonal Ring Joints
Oral Presentation. BJRS2024-150383
David Clover, *LGG Industrial, Valleyford, WA, United States*

Effect of Stiffness on Self-Loosening of Bolted Joints
Oral Presentation. BJRS2024-151043
Rashique Iftekhar Rousseau, Hakim A. Bouzid, Anh Dung Ngo, *Ecole de Technologie Supérieure, Montreal, QC, Canada*

Technical Session

Session 1.2: GASKETS AND HYDROGEN LEAK TESTING
Houston, Norris Conference Center, Magnolia 1:30 pm - 3:00 pm

Session Organizer: Anita Bausman, *VSP Technologies, Prince George, VA, United States*

Proposed Compression Testing Validation for Large ASME B16.20 Spiral Wound Gaskets
Oral Presentation. BJRS2024-151102
Tommie Bao, Charles Hugo, *Lamons Gasket Co, Houston, TX, United State*

Validation program for seals and flange gaskets in Hydrogen and Hydrogen-Methane blends applications
Oral Presentation. BJRS2024-******
Hubert Lejeune, *CETIM, Nantes, France*

Sealing of Hydrogen: A Review of Published Data
Oral Presentation. BJRS2024-151108
Stephen Bond, *Flexitallic, Houston, TX, United States*

Panel Session

Session 1.3: INTERNATIONAL PANEL SESSION ON HYDROGEN SEALING
Houston, Norris Conference Center, Magnolia 4:00 pm - 5:30 pm

Session Organizer: Hubert Lejeune, *CETIM, Nantes, France*

Panelists:
Anita Bausman, *VSP Technologies, Prince George, VA, United States*
Stephen Bond, *Flexitallic, Houston, TX, United States*
Hubert Lejeune, *CETIM, Nantes, France*
Josmar Cristello, *Teadit North America, Pasadena, TX, United States*
Stefan Hufnagel, amtec North America, Inc., Athens, OH, *United States*

THURSDAY OCTOBER 24, 2024

Plenary Technical Session II

Plenary Session #2.0: EXPANDED PTFE GASKET MATERIAL PERFORMANCE VARIATION COMPARING SOLID TO JOINTED CONSTRUCTIONS INCLUDING HOT BLOWOUT THERMAL CYCLING TESTING

Anita Bausman, *VSP Technologies, Prince George, VA, United States*

Houston, Norris Conference Center, Magnolia 9:00 am - 10:00 am

Technical Session

Session 2.1: SPECIAL APPLICATIONS AND EVALUATIONS
Houston, Norris Conference Center, Magnolia 10:00 am - 12:00 pm

Session Organizer: Anita Bausman, *SP Technologies, Prince George, VA, United States*

Optimizing Bolted Flanged Joints: Applying ASME PCC-1 Appendix O and WRC Bulletin 538 for Enhanced Tightness and Emission Control
Oral Presentation. BJRS2024-149346
Stefan Hufnagel, amtec North America, Inc., Athens, OH*, United States*, **Manfred Shaaf,** *amtec advanced measurements Gmbh, Lauffen am Neckar, Germany*

Valve Packing Tightening Optimization Regarding Emissions and Energy Consumption: Calculation Method Validation Through FEA and Experiments
Oral Presentation. BJRS2024-149295
Rémy Mateu Pastor, Hubert Lejeune, Jordan Leray, *CETIM, Nantes, France*

Proof of Concept of a Stress Measuring Gasket (Smg) Assembled with Market-Available Products
Oral Presentation. BJRS2022-151101
Matthew Hinman, *Electric Power Research Institute, Palo Alto, CA, United States*

Workshop Session

Session 2.2: ON FLANGE DESIGN BASED ON TIGHTNESS: A GRAPHICAL METHOD
Hakim A. Bouzid, *Ecole de Technologie Superieure, Montreal, QC, Canada*

Houston, Norris Conference Center, Magnolia 1:15 pm - 3:15 pm

Session Organizer: Anita Bausman, *SP Technologies, Prince George, VA, United States*

Technical Session

Session 2.3: GASKETED JOINT LEAKAGE
Houston, Norris Conference Center, Magnolia 3:45 pm - 5:15 pm

Session Organizer: Hubert Lejeune, *CETIM, Nantes, France*

An Evaluation of the Sealing Performance of Engineering PTFE-Based Gaskets in Fiberglass-Reinforced Plastic Flanges
Oral Presentation. BJRS2024-151107
Jeff Wilson, *VSP Technologies, Prince George, VA, United States*

Suggested Procedure for Determining the PCC-1 Appendix O Gasket Properties
Oral Presentation. BJRS2024-******
Dale Norman, *Teadit North America, Pasadena, TX, United States*

Root Cause Analysis of Ammonia Converter Double Cone Gasket Leakage
Oral Presentation. BJRS2024-149460
Neal Wagner, *Equity Engineering Group, Shaker Heights, OH, United States*

FRIDAY OCTOBER 25, 2024

Industrial Tour (Registration required)

BJRS Industrial Tour of TEADIT North America
Houston, 10545 Red Bluff Rd, Pasadena, TX 77507, TEADIT 9:00 am - 11:30 pm

Tour Organizer: Kimberly Miceli, *ASME, Houston, TX, United State*

Departure from Houston, Norris Conference Center at 7:30 am

TEADIT® Group is recognized worldwide as a leader in the development and manufacturing of innovative products for critical fluid sealing processes. The wide variety of sealing solutions developed by Teadit® have been important tools for many industries including the Refining, Chemical Process, and Power Generation industries. Teadit® has helped a number of industries achieve the goal of an emission-free environment within their facilities. Teadit® is constantly investing in R & D to keep up with the evolution of the industry's needs.
Teadit® North America is located in Houston, Texas. Worldwide, we have locations in South America, Europe and Asia. The variety of sealing solutions developed by TEADIT® is fundamental in order to achieve the leakage-free goal in the many industries we serve.

The quality and effectiveness of these solutions are based on management and innovation, which are the basis for all products manufactured at any Teadit® plant. As a result of this continuous process of quality improvement, an ISO 9001 certification was obtained in Brazil, the United States, and Europe. Every Teadit® product is developed, manufactured and installed to achieve the goal of ensuring leakage control and environmental preservation.

Participants will tour Teadit's North American headquarters. During their visit, they will see the gasket testing lab and warehouse. Additionally, they will get to learn and witness the manufacturing and/or fabrication of a grooved metal gasket with covering layers, cut gaskets, vertical spiral wound manufacturing, horizontal spiral wound manufacturing, and sheet gasket branding. Lastly, flange assembly training tools will be available for the guests to interact with.

Direct competitors may not be granted access. Closed toe and low heel shoes are required. For more details see the conference website or kindly contact Kim Miceli, micelik@asme.org

Exhibitors Red Oak Ballroom B

Exhibit Hours: Wednesday 10/23 - 7:30am to 3:30pm

Thursday 10/24 - 7:30am to 3:45pm

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Bolted Joint Reliability Symposium

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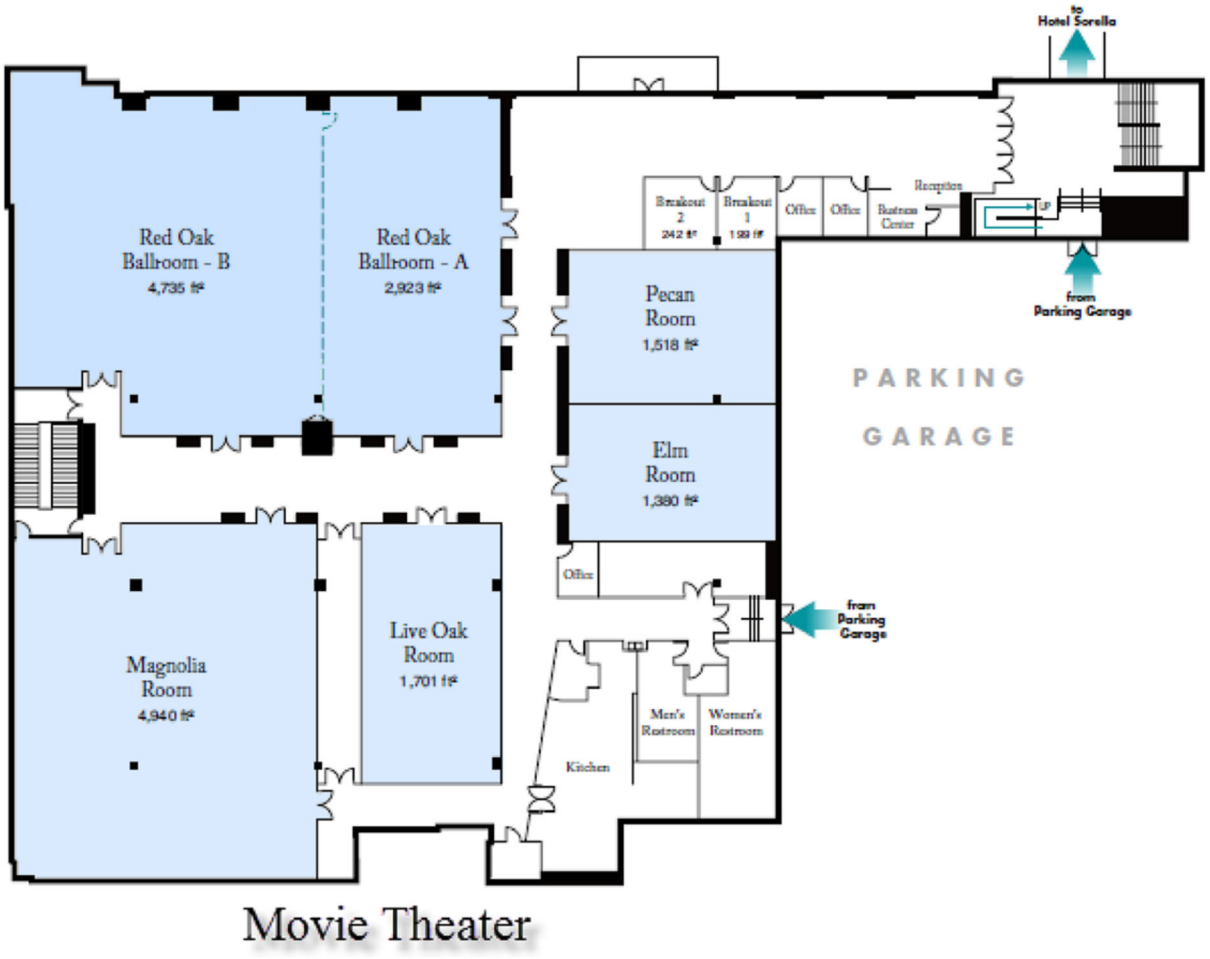
Map


to Hotel Sorella
Red Oak Ballroom - B
4,735 ft²
Red Oak Ballroom - A
2,923 ft²
Breakout 2
242 ft²
Breakout 1
199 ft²
Office
Office
Restroom Center
Reception
UP
from Parking Garage
Pecan Room
1,518 ft²
PARKING GARAGE
Elm Room
1,380 ft²
Office
from Parking Garage
Magnolia Room
4,940 ft²
Live Oak Room
1,701 ft²
Men's Restroom
Women's Restroom
Kitchen
Movie Theater

BJRS2024 Program Schedule

9/27/2024

Day 1:	Start	Finish			Presenter
Wednesday	7:30	8:45	*Registration, Breakfast, Exhibits Open*		
October 23	8:50	9:00	Welcome		H. Bouzid
Presentation #	9:00	10:00	**Plenary I: Understanding the Complexities of Sealing in a New Energy Era**		R. Riggs
1					
	10:00	10:30	*Break*		
			Session 1.1: Joining and Fastening Session Chair: Hakim Bouzid		
2	10:30	11:00	151103	Bolt Load Relaxation Behavior of Knurled Faced Washers at Elevated Temperatures	J. Knudsen
3	11:00	11:30	151110	The Truth About Double Nutting	B. Thibodeaux
4	11:30	12:00	150383	A Simple Method for Calculating Accurate Gasket Stresses for Octagonal Ring Joints	D. Clover
5	12:00	12:30	151043	Effect of Stiffness on Self-Loosening of Bolted Joints	H. Bouzid
	12:30	1:30	*Lunch*		
			Session 1.2: Gaskets and Hydrogen Leak Testing Session Chair: Anita Bausman		
6	1:30	2:00	151102	Proposed Compression Testing Validation For Large ASME B16.20 Spiral Wound Gaskets	V. Hugo
7	2:00	2:30	15------	Validation program for seals and flange gaskets in Hydrogen and Hydrogen-Methane Blends Applications	H. Lejeune
8	2:30	3:00	151108	Sealing of Hydrogen: A Review of Published Data	S. Bond
	3:00	3:30	*Break*		
			Session 1.3: International Panel Session on Hydrogen Sealing Session Chair: Hubert Lejeune		
9	3:30	5:00		Discussion with H. Lejeune, Anita Bausman, S. Bond, S. Hufnagel, Josmar Cristello	
	5:00		*Adjourn Day 1*		

EXHIBITS OPEN

Day 2:	Start	Finish			
Thursday	7:30	8:45	*Breakfast, Exhibits Open*		
October 24	9:00	10:00	**Plenary II: Exploring the behavior of Expanded PTFE Gasket Material Performance Variation Comparing Solid to Jointed Constructions including Hot Blowout Thermal Cycling Testing**		A. Bausman
10					
	10:00	10:30	*Break*		
			Session 2.1: Special Applications and Evaluations Session Chair: Anita Bausman		
11	10:30	11:00	149346	Optimizing Bolted Flanged Joints: Applying ASME PCC-1 Appendix O and WRC Bulletin 538 for Enhanced Tightness and Emission Contro	S. Hufnagel
12	11:00	11:30	149295	Valve Packing Tightening Optimization Regarding Emissions and Energy Consumption: Calculation Method Validation Through FEA and Experiments	H. Lejeune
13	11:30	12:00	151101	Proof of Concept of a Stress Measuring Gasket (Smg) Assembled With Market-Available Products	M. Hinman
	12:00	1:15	*Lunch*		
			Session 2.2: Workshop on PVRC BFC Design: A Graphical Method Session Organizer: Anita Bausman		
14	1:15	3:15		On Flange Design Based on Tightness : A Graphical Method	H. Bouzid
	3:15	3:45	*Break*		
			Session 2.3: Gasketed Joint Leakage Session Chair: Hubert Lejeune		
15	3:45	4:15	151107	Evaluating the Sealing Performance of Engineered PTFE-Based Gaskets in Fiberglass-Reinforced Plastic Flanges	J. Wilson
16	4:15	4:45	15------	Suggested Procedure for Determining the PCC-1 Appendix O Gasket Properties	D. Norman
17	4:45	5:15	149460	Root Cause Analysis of Ammonia Converter Double Cone Gasket Leakage	N. Wagner
	5:15		*Symposium Closing*		H. Bouzid

EXHIBITS OPEN

Day 3	Start	Finish	
Friday		7:30	*Departure from Norris Conference Center to Teadit facility (Industrial tour)*
October 25	9:00	11:30	**BJRS Industrial Tour of TEADIT North America** **10545 Red Bluff Rd, Pasadena, TX 77507** Participants may register to visit Teadit's North American headquarters. During their visit, they will see the gasket testing lab and warehouse. Access to the facility is subject to approval by Teadit. Direct competitors may not be granted access. Closed toe and low heel shoes are required. For more details see the conference website or kindly contact Kim Miceli, micelik@asme.org
			K. Miceli

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