



44<sup>TH</sup> **TURBOMACHINERY** & 31<sup>ST</sup> **PUMP SYMPOSIA**  
HOUSTON, TEXAS | SEPTEMBER 14 – 17 2015  
GEORGE R. BROWN CONVENTION CENTER

# Failure Analysis and Troubleshooting Mechanical Seals and Systems

Michael Huebner  
Flowserve Corporation



**44<sup>TH</sup> TURBOMACHINERY & 31<sup>ST</sup> PUMP SYMPOSIA**  
**HOUSTON, TEXAS | SEPTEMBER 14 – 17 2015**  
**GEORGE R. BROWN CONVENTION CENTER**



**Michael Huebner –  
Flowserve Corporation**

Mr. Huebner is a Principle Engineer at Flowserve Corporation in Deer Park, Texas. Mr. Huebner has been involved with the design and application of centrifugal pumps, mechanical seals, and fluid handling equipment for over 30 years. At Flowserve, he has been responsible with new product development, research, product testing, field service, and technical support. He has published numerous articles in publications and journals including in the Pump Handbook and the Encyclopedia of Tribology. He has held engineering positions both in the U.S. and Europe.

Mr. Huebner has taught extensively around the world on topics of mechanical seals, pump operations, failure analysis, and API 682. He continues to support training internally, at end users, and at major symposiums and conferences. Mr. Huebner received his BA in Engineering Technology from Texas A&M University. He is a member of the API 682 Task Force on mechanical seals and the ASME B73 Committee for centrifugal pumps. He is on the Texas A&M Pumps Users Symposium Advisory Committee and is a member of ASME.



**44<sup>TH</sup> TURBOMACHINERY & 31<sup>ST</sup> PUMP SYMPOSIA**  
HOUSTON, TEXAS | SEPTEMBER 14 – 17 2015  
GEORGE R. BROWN CONVENTION CENTER

## Course Description:

Any piece of equipment which has been in operation has a story to tell. The condition of the equipment can uncover a rich set of information which reveals the way the equipment was operated, maintained, and eventually, degraded. Noticing that equipment has failed is only the beginning. Understanding how and why it failed can be more useful since it gives the user the opportunity to eliminate or mitigate the causes of failure. Unfortunately, this is not a casual exercise and requires a structured approach. Fortunately, the methods of problem solving can be demonstrated and extrapolated to a wide variety of applications.

This course will introduce Root Cause Analysis (RCA), function evaluation, and mechanism identification in the context of mechanical seal failure investigations. In addition, these same techniques will be applied to monitoring opportunities for mechanical seal piping plans in operations. All of these techniques will focus on identifying true root causes and creating effective corrective actions to prevent the reoccurrences of failures.