

YONG-YI WANG, Ph.D.

President and CTO



Overview

Dr. Wang is a leading expert on the structural integrity of pipelines and piping systems, particularly welds and joints. He is recognized worldwide for his leadership role in the development and implementation of fitness-for-service (FFS) assessment procedures and strain-based design and assessment (SBDA) technology. His work spans from fundamental research to code adoption of emerging technologies. He has been one of the primary contributors to the pipeline integrity programs of Pipeline Research Council International (PRCI) and US DOT PHMSA.

Dr. Wang chairs the Strain-Based Design track at the International Pipeline Conference (IPC) and Fracture Mechanics Subcommittee of the API Standard 1104 committee. The API subcommittee is responsible for the update and maintenance of API 1104 Annex A. Dr. Wang was/has been a member of the ASME B31.8 Section Committee (natural gas pipelines), the ASME B31.12 Section Committee (hydrogen piping and pipelines), and a contributing member of CSA Z662.

Dr. Wang has authored over 150 technical papers on fracture mechanics, materials, welding, pipeline integrity assessment, and management of geohazards.

Awards

- *Distinguished Lecturer*, “to recognize the technical contributions of individuals that have stood the test of time,” International Pipeline Conference, Calgary, Canada, 2018,
- *Distinguished Researcher Award* “for dedicated and distinguished service and scientific achievements that have enhanced the integrity, reliability and environmental performance of energy pipelines around the world,” PRCI, 2018.
- *Session Organizer of the Year* for developing the first ISOPE Symposium on Strain-Based Design of Pipelines, 2007.
- *Best paper*, the International Pipeline Conference, Calgary, 2004, “Weld Microstructure and Hardness Prediction for In-Service Hot Tap Welds.”

Education

- Ph.D., MIT, Cambridge, Massachusetts, USA
Major: Mechanics and Materials; Minor: Business Administration
- M.S., MIT, Cambridge, Massachusetts, USA
Major: Computational Mechanics
- B.S., East China University of Science and Technology, Shanghai, China
Major: Mechanical Engineering

Major Accomplishments

A few notable recent accomplishments are as follows.

1. Dr. Wang has been leading the investigation of girth weld failure incidents of newly constructed pipelines. He is leading the research on mitigation options for pipelines already in-service and

pipelines to be built in the future to prevent similar incidents. His work is expected to impact industry practice and standards in the areas of linepipe specifications, welding procedure qualification, field girth welding practice, and weld repair procedures.

2. Dr. Wang led multiple projects on the management of ground movement hazards, including overall integrity management strategies, hazards identification and characterization, anomaly detection and characterization, material property characterization, and fitness-for-service assessment. He assists energy pipeline companies in development and implementing site-specific integrity management plans.
3. Dr. Wang was the principal investigator on the development of strain-based design and assessment models for DOT/PHMSA and industry partners for both new pipeline construction and integrity management of in-service pipelines.
4. Dr. Wang was a principal investigator of a US DOT PHMSA and PRCI funded project on the welding and application of high-strength linepipe steels.
5. Dr. Wang was the lead architect and developer of the current edition of API Standard 1104 Annex A (alternative girth weld defect acceptance criteria).
6. Dr. Wang served as the lead organizer and chair of the first dedicated symposia on the strain-based design of pipelines under the auspices of ISOPE (International Society of Offshore and Polar Engineers).

Work Experience

06/2007 – Present, President and CTO, Center for Reliable Energy Systems (CRES), Dublin, Ohio

10/1998 – 05/2007, Vice President, Engineering Mechanics Corporation of Columbus, Columbus, Ohio

08-1991 – 09/1998, Senior Research Engineer, Edison Welding Institute, Columbus, Ohio

Principal Editor of the Following ASME PVP Volumes

- *Residual Stress, Fracture, and Stress Corrosion Cracking*, the 2004 ASME Pressure Vessels and Piping Conference, San Diego, California, USA, Edited by **Y.-Y. Wang**, July 25-29, 2004.
- *Flaw Evaluation, Service Experience, and Materials for Hydrogen Service*, the 2004 ASME Pressure Vessels and Piping Conference, San Diego, California, USA, Edited by **Y.-Y. Wang**, July 25-29, 2004.
- *Experience with Creep-Strength Enhanced Ferritic Steels and New and Emerging Computational Methods*, the 2004 ASME Pressure Vessels and Piping Conference, San Diego, California, USA, Edited by **Y.-Y. Wang**, July 25-29, 2004.

Editor of the Following Conference Proceedings

- *The Proceedings of the Seventeenth (2009) International Offshore and Polar Engineering Conference, Vol. 4*, Lisbon, Portugal, Edited by H. Jin, D. Lillig, T. Tsakalakos, **Y.-Y. Wang**, and E. Tsuru, July 1-6, 2007.
- *The Proceedings of the Eighteenth (2008) International Offshore and Polar Engineering Conference, Vol. 4*, Vancouver, Canada, Edited by H. Jin, **Y.-Y. Wang**, and D. Lillig, July 6-11, 2008.
- *The Proceedings of the Nineteenth (2009) International Offshore and Polar Engineering Conference, Vol. 4*, Osaka, Japan, Edited by H. Jin, **Y.-Y. Wang**, E. Tsuru, and M. Fujikubo, June 21-26, 2009.