

# Yu-Ping Yang

## Principal Engineer



### TECHNICAL EXPERTISE

Yu-Ping Yang joined EWI in 2004 in the structural integrity and modeling group. His main area of expertise is computational modeling of thermal related processes to predict temperature, microstructure, residual stress, and distortion in large and complicated structures. He has extensive experience in finite-element analysis of welded structures including static, dynamic, creep, and fatigue simulation. He also has strong capabilities in welding and thermal forming software development, and in-depth knowledge in the mitigation of weld residual stress, distortion, and cracking.

### BACKGROUND AND PROJECT EXPERIENCE

Prior to joining EWI, Yu-Ping worked at Battelle Memorial Institute as a Principal Research Scientist and as a Postdoctoral Researcher at the University of Missouri-Rolla. He has developed a number of finite-element

thermomechanical modeling procedures and tools to simulate manufacturing processes in many government and industrial projects. Some of his work has included the following:

- Numerical simulation of additive manufacturing processes including LENS and L-PBF
- Prediction and mitigation of weld residual stress and distortion
- Development of welding simulation software (EWI WeldPredictor and Q-Weld)
- Creep and fatigue life prediction of high-temperature service equipment
- Develop an ICME Approach for Optimizing Welded Structure Design
- Multi-physics modeling of a welded furnace roll
- Predict spot-weld failure in automotive crash analysis
- Model dissimilar metal welding and brazing process
- Predict the microstructure and hardness in Weld and HAZ
- Predict the mechanical performance of steel to composite bonded joint systems

### AWARDS AND PUBLICATIONS

Yu-Ping is the recipient of the 2009 Sossenheimer award for welding software development from the International Institute of Welding and the 2013 Elmer L. Hann Award from the Society of Naval Architects and Marine Engineers. He has approximately 100 publications in journals and conference proceedings, is a principal reviewer for the *Welding Journal*, and is chair of the ASM AM&P magazine editorial committee.

### EDUCATION

B.S. Mechanical Engineering, Taiyuan University of Technology, China  
 M.S. Welding Engineering, Taiyuan University of Technology, China  
 Ph.D. Welding Engineering, Harbin Institute of Technology, China

### PROFESSIONAL AFFILIATIONS

American Welding Society  
 ASM International



1250 Arthur E. Adams Dr.  
 Columbus OH 43221  
 614.688.5000  
 ewi.org