Monday, November 18, 2013

Session 1: Automation and Sensors

1A. 1:00PM
*Real-Time Detection for Short-Circuit Mode GMAW*
by Joseph Russell, Yoni Adonyi Derek Hoyt and Nathan Berthiaume, LeToureau University, Longview, TX

1B. 1:30PM
*Using Intelligent Automation to Improve Tank and Vessel Welding Productivity and Quality*
by Jeffrey Noruk and Blake Holmes Servo Robot Inc., Milwaukee, WI

1C. 2:00PM
*Case Studies: Implementation of Sensors for Robotic Welding*
by Chris Anderson and Jack Moore, Yaskawa Motoman, Miamisburg, OH

1D. 2:30PM
*The Use of Vision System for Robotic Laser Welding of Tube-to-Tubesheet*
by Paul Denney, The Lincoln Electric Company, Clevenland, OH and Stan Ream, EWI, Columbus, OH

1E. 3:00PM
*Closed-Loop Controlled Microwave Design for Ceramics to Metal Joining*
by Allen Worcester, Yoni Adonyi, SeungHyunKim and Tim Privitt, LeToureau University, Longview, TX

1F. 3:30PM
*Development of Single-Side Resistance Spot Welding Technology Applying In-Process Welding Current and Electrode Force Control*
by Muneo Matsushita, Rinsei Ikeda and Kenji Oi, JFE Steel Corporation, Chiba, China

1G. 4:00PM
*Vision Based Real-Time Monitoring and Control of Metal Transfer in Laser Enhanced Gas Metal Arc Welding*
by Yan Shao and YuMing Zhang, University of Kentucky, Lexington, KY

1H. 4:30PM
*A Study on Robust Weaving Width Control Algorithm Using Arc Sensor in TIG Welding*
by Seokhyoung Lee, Hyeong-Soon Moon, Jong-Cheol Kim and Ji-On Kim, Hyundai Heavy Industries Co, LTD, Ulsan, S. Korea

1I. 5:00PM
*Development of a Macro/Micro Telerobotic Welding System for Working in the Nuclear Pipeline Maintenance*
by Haichao Li, Hongming Gao and Na Dong, State Key Lab of Advanced Welding and Joining, Harbin Institute of Technology YuMing Zhang, University of Kentucky, Lexington, KY
Monday, November 18, 2013

Session 2: NSF-CIMJSEA Welding Metallurgy

2A. 1:00PM
*Development of a New Generation Cast Pin Tear Test for Evaluation of Solidification Cracking in Weld Metals*
by T. C. Luskin, B.T. Alexandrov and J.C. Lippold, The Ohio State University, Columbus, OH
S.L. McCracken, Electric Power Research Institute, Charlotte, NC

2B. 1:30PM
*Varestraint Weldability Testing: Comparison of Laser and Arc Welding*
by Stephen Tate and Stephen Liu, Colorado School of Mines, Golden, CO

2C. 2:00PM
*Metallurgical Characterization of High Strength Alloys Competitive Evaluation of Welding versus Hot Induction Bending*
by Tiffany Y. Ngan, B.T. Alexandrov and J.C. Lippold, The Ohio State University, Columbus, OH
John Lawmon, American Engineering & Manufacturing, Inc., Columbus, OH

2D. 2:30PM
*Post Weld Heat Treatment Response of 2.25Cr-1Mo Steel*
by David Hodgson and J.C. Lippold, The Ohio State University, Columbus, OH

2E. 3:00PM
*The Microstructural Evolution and Aging Response of Dissimilar Metal Welds Involving Alloy N*
by Robert Hamlin and John DuPont, Lehigh University, Bethlehem, PA

2F. 3:30PM
*Precipitate Evolution in Cr-Mo Welds*
by Soumya Mohan and S.Suresh Babu, The Ohio State University, Columbus, OH
Teresa Melfi, Badri Narayanan and Ben Schaeffer, The Lincoln Electric Co., Cleveland, OH

2G. 4:00PM
*Microstructural Characterization and Bond Evolution in Dissimilar Material Welds Made Using VHP UAM*
by Niyanth Sridharan and S. Suresh Babu, The Ohio State University, Columbus, OH

2H. 4:30PM
*Advanced High Strength Steels for Energy Efficiency*
by Daniel Tung, S. Suresh, Gary Cola and Wei Zhang, The Ohio State University, Columbus, OH
Monday, November 18, 2013

Session 3: Applied Technology I

3A. 1:00PM
*Development of AC Gas Metal Arc Welding for Welding Thin Automotive Components*
by Frank Armao, The Lincoln Electric Company, Cleveland, OH

3B. 1:30PM
*Measuring Equipment for Welding Properties of MIG/MAG Welding Wires*
by Kai Boockmann and Michaela Boockmann, Boockmann GmbH, Bavaria, Germany

3C. 2:00PM
*Waveform in Arc Welding of Aluminum Alloys - Effect on Bead Profile and Performance*
by Jian Zhang and Murat Acar, The Lincoln Electric Company, Cleveland, OH

3D. 2:30PM
*Development of a Versatile Deep Bore Laser Cladding Tool*
by Andrew Nissly, Nittany Laser Technologies, State College PA
Edward Reutzel and Todd Palmer, Penn State University, State College, PA

3E. 3:00PM
*Using Welding Information to Drive Continuous Improvement*
by Caleb Krisher, Miller Electric Mfg. Co., Appleton, WI

3F. 3:30PM
*Dissimilar Metal Welding Critical Considerations for Assured Success*
by Russel Fuchs and Jeff Soltis, Bohler Welding Group USA, Inc., Stafford, TX
Herbert Heuser and Bernd Hoberg, Böhler Schweisstechnik Deutschland GmbH, Hamm, Germany

3G. 4:00PM
*Zone Flow™ Fume Extraction Technology*
by Allan Hilbert, Miller Electric Mfg. Co., Appleton, WI

3H. 4:30PM
*Optimization of Corrosion Resistance and Weldability - A Challenge for Superduplex Filler Metals*
by Joe Zawodny and Russel Ruchs, Bohler Welding Group USA, Inc., Stafford, TX
Volker Gross and Bernd Hoberg, Böhler Schweisstechnik Deutschland GmbH, Hamm, Germany

3I. 5:00PM
*Failure Analysis of Lean Solution Cooler Exchanger Tube to Tube-Sheet (TTS) Weld Failure*
by Hamad Almostaneer, Mohammed Al-Rabie and Harry Schrijen, Sabic Technology Center, Jubail Industrial City, Saudi Arabia
Tuesday, November 19, 2013

Session 4: Keynote Addresses

4A. 8:00AM
Evolution of Steels, Joining Trends and Challenges in the Automotive Industry
by Murali D. Tumuluru, US Steel Corporation

4B. 9:00AM
Additive Manufacturing Developments for Industrial Exploitation – A Suite of Processes
by Ian Harris, Edison Welding Institute
Tuesday, November 19, 2013

Session 5: NSF-CIMJSEA Modeling

5A. 10:00AM
*Effect of LTTW on Weld Distortion and Residual Stress Control - Experimental Verification and Numerical Modeling*
by Sindhu Thomas, Ali Alshawaf and Stephen Liu, Colorado School of Mines, Golden, CO
Zhili Feng, Oak Ridge National Laboratory, Oak Ridge, TN

5B. 10:30AM
*Muti-Scale FEA Modeling of Brazed Joint Structures in Ni-based Superalloys for Gas Turbine Applications*
by Brian Riggs, B.T. Alexandrov and Avraham Benatar, The Ohio State University, Columbus, OH

5C. 11:00AM
*Weld-Metal Solidification of Ternary Mg-Al-Ca Alloys – an application of computational thermodynamics*
by Tayfun Soysal and Sindo Kou, University of Wisconsin, Madison, WI

5D. 11:30AM
*Modeling Microstructure Evolution during Laser Metal Deposition*
by K. Makiewicz, A. Prabhu, S.S. Babu and A. Chaudhary, The Ohio State University, Columbus, OH
Tuesday, November 19, 2013

Session 6: NSF-CIMJSEA Processing

6A. 10:00AM
Influence of Fluid Convection on Formation of Weld Pool during Laser Cladding
by Y.S. Lee, S.Suresh Babu and Dave Farson, The Ohio State University, Columbus, OH
Mark Nordin, Rolls Royce, Indianapolis, IN

6B. 10:30AM
Gas-Metal Arc Welding of Magnesium Alloys: Spattering and Gas Porosity
by Dustin Wagner, Youngki Yang, Hiromi Konishi and Sindo Kou, University of Wisconsin, Madison, WI

6C. 11:00AM
A Novel Technique for Small-Scale Impact Welding and Welding Parameter Characterization
by Bert Liu and Anupam Vivek, The Ohio State University, Columbus, OH

6D. 11:30AM
Characterization of Robotic Gas Metal Arc Welding
by Andrew Neill and John Steele, Colorado School of Mines, Golden, CO
Tuesday, November 19, 2013

Session 7: Welding Metallurgy I

7A.  2:00PM
Microstructure Characterization of High-Cr Ni-Base Filler Metal
by Xiuli Feng, Eric Fusner and J.C. Lippold, The Ohio State University, Columbus, OH

7B.  2:30PM
Development of Continuous Cooling Transformation Diagrams for Weld Metal of Creep-Resistant Steels
by Joseph Steiner, B.T. Alexandrov and J.C. Lippold, The Ohio State University, Columbus, OH

7C.  3:00PM
Microstructural Evolution and Mechanical Properties of Thermally Simulated Eglin Steel
by Brett Leister and John DuPont, Lehigh University, Bethlehem, PA

7D.  3:30PM
Development of CCT Diagrams for the CGHAZ of Creep-Resistant Steels
by Katie Strader, Xiuli Feng, B.T. Alexandrov and J.C. Lippold, The Ohio State University, Columbus, OH

7E.  4:00PM
An Investigation of the Effect of Nickel as an Alloying Agent on Toughening and Strengthening Mechanisms in High Strength Low Alloy (HSLA) Submerged Arc Welding (SAW) Multiple-Pass Welds
by Kin-Ling Sham and Stephen Liu, Colorado School of Mines, Golden, CO

7F.  4:30PM
Quantitative Microstructure Analysis in Grade T22 Steel Welds
by Xiuli Feng, B.T. Alexandrov, Joseph Steiner, Katherine Strader and J.C. Lippold, The Ohio State University, Columbus, OH

7G.  5:00PM
Microstructural Evaluation of Penetration Enhancing Flux Through Paint, and Cored Wire Addition to 304L Stainless Steel
by Kevin Faraone, Honeywell FM&T
J.C. Lippold, The Ohio State University, Columbus, OH
Tuesday, November 19, 2013

Session 8: Modeling

8A. 2:00PM
Laser micro-welding to form electrical contacts on photovoltaic devices
by Ashwin Raghavan, T. DebRoy, and Todd Palmer, The Pennsylvania State University, University Park, PA

8B. 2:30PM
Grain Refinement of Aluminum Alloy Weld Metal
by Carl Cross, Los Alamos National Laboratory, Los Alamos, NM
P. Schempp, A. Pittner and M. Rethmeier, BAM, Berlin, Germany

8C. 3:00PM
Physics-based Formulation of Heat Generation for Thermo-Mechanical Modeling of Rotary Friction Welding
by Wei Zhang and S. Suresh Babu, The Ohio State University, Columbus, OH
David Mahaffey, AFRL, Wright-Patterson AFB, OH

8D. 3:30PM
Optimum Design Based on Mathematical Model and Neural Network to Predict Reinforcement for Duplex Fillet Joints
by Carolina Payares-Asprino and John Steele, Colorado School of Mines, Golden, CO
Lusia Fernanda Espinosa, Universidad Simón Bolívar, Caracas, Venezuela

8E. 4:00PM
Weld Penetration Control in GTAW Based on 3D Weld Pool Measurements
by YuKang Liu and YuMing Zhang, University of Kentucky, Lexington, KY

8F. 4:30PM
Development of High-Cr, Ni-base Filler Metals based on Computational and Experimental Techniques
by Adam Hope and J.C. Lippold, The Ohio State University, Columbus, OH

8G. 5:00PM
Data Driven Models of Human Welder Behavior: A Comparison Between Unskilled and Skilled Welders
by WeiJie Zhang and YuMing Zhang, University of Kentucky, Lexington, KY
Wednesday, November 20, 2013

Session 9: High Energy Density Welding Processes

9A. 8:00 AM Improved Drilling Studies of Crimped Tubes of 304L
by T.J. Lienert, J.O. Sutton and R.T. Forsyth, Los Alamos National Laboratory, Los Alamos, NM

9B. 8:30 AM Investigation of Plasma Arc Welding as A Method for the Additive Manufacturing of Ti-6Al-4V Alloy Components
by Joe Stavinoha, Wolf Robotics, Fort Collins, CO
Bruce Madigan, Montana Tech, Butte, MT

9C. 9:00 AM
Effect of Mn and N Vaporization during Laser Beam Welding of Alloy 21Cr 6Ni 9Mn Weldment Mechanical Properties
by Pfeif Erik, M. Mataya and D. Olson, Colorado School of Mines, Golden, CO
Carl Cady and Shang Liu, Los Alamos National Labs, Los Alamos, NM

9D. 9:30 AM
Laser-GMA Hybrid Welding of Alloy 690
by Jared Blecher, Huiliang Wei, Todd Palmer and T. DebRoy, The Pennsylvania State University, Univeristy Park, PA

9E. 10:00 AM
ATIG and Laser Process for Titanium Welding With Cryolite-Containing Fluxes: Penetration Enhancement and Corrosion Resistance
by Ali Aishawaf, Stephen Liu and Tariq AlSabti, Colorado School of Mines, Golden, CO

9F. 10:30 AM
Experimental Study of Laser Enhanced GMAW Using a High Power Density Fiber Laser
by Jun Xiao and YuMing Zhang, University of Kentucky, Lexington, KY
Guangjun Zhang, Harbin Institute of Technology, Harbin, China
Wednesday, November 20, 2013

Session 10: Applied Technology II

10A. 8:00AM
Getting Outside Your Own Box: Implementing an end-user driven product development and design processes
by John Henderson, Ross Fleishmann and David Pryor, Victor Technologies, Denton TX

10B. 8:30AM
Comparison of Mechanical Properties and Productivity Using the Various SMAW Techniques for Pipelines
by Quenton Champ and Russel Ruchs, Bohler Welding Group USA, Inc., Stafford, TX
Manfred Hofer, Böhler Welding Holding GmbH, Düsseldorf, Germany

10C. 9:00AM
Recent Developments in Joining Technologies for Electric Packaging
by Weiping Liu, Indium Corporation, Clinton, NY

10D. 9:30AM
How to Keep Stainless Steel 100% Stainless
by Robert Sauders, Bohler Welding Group USA, Inc., Stafford, TX

10E. 10:00AM
Productivity Improvements for GTAW Pipeline Girth Welding
by Andrew Wasson, Nathan Nissley, Neerav Verma and Rick Noecker, ExxonMobil Upstream Research Company, Houston, TX

10F. 10:30AM
Improvement to Drawn Arc Stud Welding Process
by David Workman and Nancy Porter, Edison Welding Institute, Columbus, OH

10G. 11:00 AM
Control of Welding Distortion in Large Stainless Steel Structures
by Suresh Srinivasan, Consultant, Tiruchirappalli, India
N. Raju, Welding Research Institute, Tiruchirappalli, India
Wednesday, November 20, 2013

Session 11: Welding Metallurgy II

11A.  1:30 PM
Use of calorimetry to create CCT diagrams:
by P. F. Mendez, J. Gibbs and A. Kamyabi, University of Alberta, Alberta, Canada

11B.  2:00 PM
Electrode Life, Tensile Properties and Weld Microstructures in Resistance Spot welding of Hot-Stamped Ultra-High Strength Steel Sheets
by Kevin Chan, Huys Industries Ltd.
Dulal Chandra Saha, Sashank Nayak and Paulo Penner, University of Waterloo, Waterloo, Canada
Elliot Biro, ArcelorMittal Dofasco Inc., Hamilton, Canada

11C.  2:30 PM
Welding of Advanced Naval Steels
by Jason Bono and John DuPont, Lehigh University, Bethlehem, PA

11D.  3:00 PM
Investigation of the Weldability of High-Cr Ni-base Filler Metals
by Timothy Luskin, B. T. Alexandrov and J.C. Lippold, The Ohio State University, Columbus, OH
S.L. McCracken, Electric Power Research Institute, Charlotte, NC

11E.  3:30 PM
Cold Metal Transfer Weld Overlays - Application in Nuclear Power Repair
by Nathaniel McVicker, Eric Przybylowicz, B.T. Alexandrov and J.C. Lippold, The Ohio State University, Columbus, OH

11F.  4:00 PM
Resistance Spot Welding of UNS S32304 and UNS 32205 Duplex Stainless Steels
by Yves F. da Silva, GGB Brazil, Sao Paulo, Brazil
Dany Centeno and Sérgio Brandi, University of Sao Paulo, Sao Paulo, Brazil
Valdir Furlanetto, Welding Science, Sao Paulo, Brazil
Marcio Batista, Volkswagen Brazil, Sao Paulo, Brazil

11G.  4:30 PM
Time-Temperature Transformation in 3207 Hyperduplex Stainless Steel
by Doris Ivette Villalobos Vera and J.C. Lippold, The Ohio State University, Columbus, OH

11H.  5:00 PM
Investigation of Processing Properties of Copper Based Filler Metals in MIG and Laser Brazing Processes of Steel Sheets with Different Strength Characteristics
by Michael Ebbinghaus, Fontargen, Eisenberg, Germany
Wednesday, November 20, 2013

Session 12: Arc Welding Processes

12A. 1:30PM
Efforts to Reduce Manganese Fume Emissions During Flux Cored Arc Welding of Standard Carbon Steels
by Stanley Ferree, ESAB Welding and Cutting Products, Hanover, PA

12B. 2:00PM
Arc Separability and Measurement of Arc Components
by Shujun Chen, Fan Jiang and Zhenyang Lu, Beijing University of Technology, Beijing, China
YuMing Zhang, University of Kentucky, Lexington, KY

12C. 2:30PM
Effect of Waveform and Frequency on AC Square Wave Submerged Arc Welding of AISI 304L Joints for Cryogenic Applications
by Karine d'Avila Zaccari, Antonio Souza and Carlos Faggiani, Lincoln Electric Brazil, Sao Paulo, Brazil
Sérgio Brandi, University of Sao Paulo, Sao Paulo, Brazil

12D. 3:00PM
Metal Transfer Control in Arcing-Wire GTAW
by Shujun Chen, Ning Huang, Zhenyang Lu, Yuming Zhang and Yan Liu, Beijing University of Technology, Beijing, China

12E. 3:30PM
Effect of Waveform and Frequency on Submerged AC Square Wave Equipment on Weld Metal Chemical Composition of ER308L, ER309L, ER2209 and ER2594
by Jair Mendonca, Infraero, Sao Paulo, Brazil
Karine d'Avila Zaccari, Lincoln Electric Brazil, Sao Paulo, Brazil
Sérgio Brandi, University of Sao Paulo, Sao Paulo, Brazil

12F. 4:00PM
Feasibility Study of Cross Arc Welding Process
by Shujun Chen, Liang Zhang, Zhenyan Lu, Yuming Zhang and Yuping Wang, Beijing University of Technology, Beijing, China

12G. 4:30PM
Corrosion Resistance of Autogeneous Duplex Stainless Weld Metal Deposited by Orbital TIG Welding Process
by Chan Kim, Jeong-Kweon Joo, Young-Pil Kim and Jun-Tae Choi, Hyundai Heavy Industries Co, LTD, Ulsan, S. Korea

12H. 5:00PM
Mechanical and Microstructural Properties of CMT- MIG Welded AW 5083 and AW 6082 Aluminum Alloys
by B. Güngor, Turkish Naval Forces, Gölcük-Kocaeli, Turkey
E. Kaluc and E. Taban Kocaeli University, Umuttepe-Kocaeli, Turkey
A. Şik, Gazi University, Ankara, Turkey

12I. 5:30PM
Relation between Stability of the Pulse Cycle Time and Weld Surf Undulation in Pulsed GMA Welding
by Rajasekaran Shanmugam and R. Umarani, El-Shaddai Welding and Cutting Consultants, Nadu, India
Wednesday, November 20, 2013

Session 13: Solid-State Welding Processes

13A. 1:30PM
Effects of Welding-Induced Residual Stresses on Fatigue Crack - Propagation in Friction Stir Welded API 5L X80 Pipeline Steel
by Jeffrey Soward and J. David McColskey, National Institute of Standards and Technology, Boulder, CO
Antonio J. Ramirez and Victor Pereira, Brazilian Nanotechnology National Laboratory, Campinas, Brazil

13B. 2:00PM
Spin Explosive Solid Bonding of Copper on Low Carbon Steel Base Plate
by Jianping He, Donald Sirois, Howard Wikle and Bryan Chin, Auburn University, Auburn, AL

13C. 2:30PM
Refill Friction Stir Spot Welding of Aluminum Alloys
by Kevin Chan and Nigel Scotchmer, Huys Industries Ltd., Toronto, Canada
Adrian Gerlich, University of Waterloo, Waterloo, Canada

13D. 3:00PM
Friction Stir Welding of 1-in Thick Steel
by Brian Thompson, Tim Stotler, Mike Eff and John Seaman, Edison Welding Institute, Columbus, OH

13E. 3:30PM
Flash Butt Welding Techniques for Coil Joining of Advanced High Strength Steels
by Robert Matteson, Taylor-Winfield Technologies, Youngstown, OH

13F. 4:00PM
High Frequency-Enhanced Friction Stir Welding of Bridge Steels
by Yoni Adonyi, Hayden Adams, Nathan Dix and Devon Peluso, LeToureanu University, Longview, TX

13G. 4:30PM
Friction Stir Welding of In-Situ Synthesized Al+12Si/TiC Metal Matrix Composites
by Manas Mahapatra, Belete Sirahbizu Yigezu and P.K. Jha, Indian Institute of Technology Roorkee, Roorkee, India
N.R. Mandal, Indian Institute of Technology Kharagpur, West Bengal, India

13H. 5:00PM
The Strength and Metallography of Bimetallic Friction Stir Joint Between AA6061 and High Hardness Armor Steel
by Richard Miller, Focus Hope Industries, Detroit, MI

13I. 5:30PM
Tool Geometry Effect On The Thermal Condition and Material Flow of FSW of 7039 Aluminum Alloys
by Manas Mahapatra, D. Venkateswarlu and S.P. Harsha, Indian Institute of Technology Roorkee, Roorkee, India
N.R. Mandal, Indian Institute of Technology Kharagpur, West Bengal, India
Thursday, November 21, 2013

Session 14: NSF-CIMJSEA Mechanical & Corrosion Properties

14A.  8:00 AM
Stress Relaxation of Candidate Nickel-Base Superalloy Welds for Advanced Supercritical Coal-Fired Power Plants
by David Tung and J.C. Lippold, The Ohio State University, Columbus, OH

14B.  8:30 AM
Stress Corrosion Cracking Mitigation of 7003 Al-Mg-Zn-Cu alloy Gas Metal Arc Welding
by Tyler Borchers, S.Suresh Babu, Wei Zhang and David Phillips, The Ohio State University, Columbus, OH

14C.  9:00 AM
Hydrogen Assisted Cracking in Dissimilar Metal Welds under Cathodic Protection Hydrogen Kinetics and Fracture Behavior
by Desmond Bourgeois, B.T. Alexandrov, Jamey Fenske and J.C. Lippold, The Ohio State University, Columbus, OH

14D.  9:30 AM
Corrosion Fatigue Behavior of Nickel Based Alloy Weld Overlay and Coextruded Coatings
by Andrew Stockdale and John DuPont, Lehigh University, Bethlehem, PA

14E.  10:00 AM
Microstructural and Mechanical Characterization of Developed Multiphase Wide Gap - Braze Alloys for the Repair of Nickel-Base Superalloys
by Scott Nelson and Stephen Liu, Colorado School of Mines, Golden, CO
Sranth Kottilingam, GE Power & Water

14F.  10:30 AM
by Daniel Bechetti and John DuPont, Lehigh University, Bethlehem, PA

14G.  11:00 AM
Stress Rupture Evaluation of Steel Welding Consumables
by X. Chai and S. Kou, University of Wisconsin, Madison, WI
J. Bundy, Hobart Brothers, Troy, OH
S. Suresh Babu, The Ohio State University, Columbus, OH
Thursday, November 21, 2013

Session 15: Weldability Topics

15A.  8:00AM
Effects of Welding Variables on the Weldability of High Manganese Steel
by Jae-Hee Lee, Young-Pil Kim and Jun-Tai Choi, Hyundai Heavy Industries Co, LTD, Ulsan, S. Korea

15B.  8:30AM
Evaluation of Heat-Affected Zone Hydrogen-Induced Cracking for High-Strength Steels Using
by Xin Yue, Xiuli Feng and J.C. Lippold, The Ohio State University, Columbus, OH

15C.  9:00AM
Dilution Effect on Solidification Modes in Dissimilar Metal Welds
by Ivan Mendoza and J.C. Lippold, The Ohio State University, Columbus, OH

15D.  9:30AM
Application of the Delayed Hydrogen Cracking Test Ranking Susceptibility of Welds to Hydrogen-Assisted
Cracking under Cathodic Protection
by Desmond Bourgeois, B.T. Alexandrov, Shu Shi and J.C. Lippold, The Ohio State University, Columbus, OH

15E.  10:00AM
Stress-Relief Cracking in Creep-Resistant Steel Welds
by Katie Strader, B.T. Alexandrov and J.C. Lippold, The Ohio State University, Columbus, OH

15F.  10:30AM
Susceptibility to Hydrogen Assisted Cracking in Creep-Resistant Steel Welds
by Joseph Steiner, Xiuli Feng, B.T. Alexandrov and J.C. Lippold, The Ohio State University, Columbus, OH

15G.  11:00AM
Evaluation of hydrogen embrittlement in multi-pass weld metal of pipeline steels – Role of microstructural
heterogeneity
by H.Y. Song, S.Suresh Babu and W. Zhang, The Ohio State University, Columbus, OH