



AUTOMATIC WELDING:

THE TIME IS NOW

**AWS Conference on Automatic Welding
New Orleans • May 13-14, 2008**

Join the experts on many of the new technologies in automatic welding as they describe how such processes as friction stir welding, several types of laser welding, and hot wire welding can be introduced to critical welding operations.



American Welding Society®

Founded in 1919 to advance the science, technology and application of welding and allied joining and cutting processes, including brazing, soldering and thermal spraying.

Automatic welding, for which the equipment requires little or no observation or manual adjustment, has enabled industry to dramatically accelerate output and increase quality. This conference covers new technologies in automatic controls, training and management innovations, and automation breakthroughs for the latest welding processes, including fiber and disk lasers, friction and thermal stir welding, hot-wire tungsten arc welding, laser/GMAW hybrid welding, as well as automation technologies for traditional processes, such as submerged arc welding.

AUTOMATIC WELDING CONFERENCE PROGRAM

TUESDAY, MAY 13, 2008

CONTINENTAL BREAKFAST

8:00 a.m. – 8:50 a.m.

WELCOME

8:50 a.m. – 9:00 a.m.

Robert R. Irving, Conference Chairman

Michael Blakely, Conference Co-Chairman

The Welder Shortage

9:00 a.m. – 9:45 a.m.

John C. Bruskotter, Bruskotter Consulting Services, Belle Chasse, LA

It is no surprise to anyone that the welder shortage has created a serious problem throughout our industry. The training of new welders cannot keep up with the demand for the skilled labor that many industries require. This presentation will provide you with some of the statistics that show the shortages in the U.S., as well as in other parts of the world. You will also be provided with some suggestions as to the best way to handle this crisis.

Who Will We Train? What Will We Teach? Where Will They Work?

9:45 a.m. – 10:30 a.m.

Daniel G. Sechler, Carolina Energy Solutions, Rock Hill, SC

Mr. Sechler will discuss where the labor inputs will come from in the future and how we can get the word out to that potential workforce. The session will also cover ASME Section IX for Pipe and AWS D1.1 *Structural Welding Code-Steel*, what we need to learn about them, and the need to test in order to prove what we have learned meets the needs of the industry. Additionally, the need for skilled craftspersons in the energy industry and how it far exceeds the supply will be discussed. Learn more about this great opportunity and how you can obtain the American dream without a four-year degree.

MORNING BREAK

10:30 a.m. – 10:50 a.m.

Welding Automation – Solutions to Common Design & Application Challenges

10:50 a.m. – 11:35 a.m.

Geoff Lipnevicius, The Lincoln Electric Company, Automation Division, Cleveland, OH

Automatic welding can improve your productivity and be economical. On the flip side, it can be inefficient and cost-prohibitive if certain design considerations are overlooked. In this talk, several case studies will be presented that objectively analyze the advantages of new welding processes, quality-enhancing techniques, and new features of robotic automation, to counter the challenges of rising labor, materials and energy costs.

Real-Time Quality Monitoring Using Data Fusion Techniques

11:35 a.m. – 12:15 p.m.

Ta-Chieh Huang, Edison Welding Institute, Design, Controls & Automation Group, Columbus, OH

EWI has recently completed work which studied the feasibility and benefit of fusing arc data monitoring with other sensing methods, such as electro-optical sensory, thermographic imaging, light spectrometry, laser vision, and high-speed video technology, and taking advantage of the core competencies of each technique while negating their deficiencies.

LUNCH (PROVIDED)

12:15 p.m. – 1:15 p.m.

Innovations in Robotic Welding

1:15 p.m. – 2:00 p.m.

Doug Rhoda, Wolf Robotics, Fort Collins, CO

New demands from industry have introduced robotics to such technologies as submerged arc welding and hybrid welding.

Laser Hybrid Welding – What, Why, Where and How

2:00 p.m. – 2:45 p.m.

Craig Bratt, Fraunhofer Center for Coatings and Laser Applications, Plymouth, MI

The results of over 10 years of Fraunhofer applications development in the field of laser hybrid welding will be presented, including Nd YAG, fiber and CO₂ laser/MIG (GMAW) hybrid welding and laser/plasma hybrid welding processes. Process fundamentals and an overview of the pros and cons of laser hybrid processing will be presented. A variety of developmental and industrial applications will also be discussed, including some examples of industrial applications in Europe.

AFTERNOON BREAK

2:45 p.m. – 3:05 p.m.

Magnetic Pulse Welding – Automating the Next Generation of Welding

3:05 p.m. – 3:50 p.m.

Michael Blakely, Hirotec America Inc., C3 Magnetic Pulse Division, Auburn Hills, MI

One of the key drivers in automating today's conventional welding processes is to remove the operator from the environment of heat, fumes, sparks and spatter. One of the key aspects of magnetic pulse welding (MPW) is that these detrimental aspects of welding are not present. In addition to this advantage, MPW gives the capability to join similar and dissimilar metals quickly and with repeatable first-time quality. Used successfully in a number of both manual and automatic systems, an overview of each, with examples, will be included. Since MPW is still regarded by some as an emerging technology, the presentation will include an introduction to the process as a pre-cursor to the discussion of applications.

Design for Manufacturing with Robotic Welding

3:50 p.m. – 4:35 p.m.

Terry O'Connell, Genesis Systems, Davenport, IA

There are a number of reasons companies have when choosing to proceed toward welding automation: cost reduction by direct labor savings, improved part quality because of automatic process repeatability, and scarcity of skilled welders to note a few. In order to do this successfully, certain attributes of the process need to be identified to ensure success. Examination of part design is needed as changes might be needed for joint design; and current manufacturing processes may need evaluation for method, robustness, and repeatability. The focal point of this discussion will look at some of the key design considerations for the automated process: welding position, parts repeatability, joint repeatability and design, torch access, sensory technology, tooling requirements, and operator/robot work balance, to name a few. Other aspects of the design for manufacturing process include usage of tools such as VSA (variation simulation analysis), which when used in the design phase of the product can truly improve the overall manufacturability of the product by looking at single part variation with respect to the finished product, and associated tolerance and datum schemes.

WEDNESDAY, MAY 14, 2008

CONTINENTAL BREAKFAST

8:00 a.m. – 9:00 a.m.

Understanding the Nature of Hazardous Welding Fumes in the Workplace and Steps that Can Be Taken to Reduce Exposures

9:00 a.m. – 9:45 a.m.

Susan Fiore, Edison Welding Institute, Columbus, OH

A new federal standard has significantly reduced the permissible exposure limit for hexavalent chromium. This, coupled with the exposure to fumes containing manganese, has raised the level of concern for many manufacturers. This presentation will cover some of the details of the new standard along with steps that can be taken, including automation, which may help to reduce personnel exposures.

Innovations in Submerged Arc Welding

9:45 a.m. – 10:30 a.m.

John DeLoach, Naval Surface Warfare Center, West Bethesda, MD

Over the past decade, significant advancements have been made in submerged arc welding. This all comes at an appropriate time now that industry at large is concerned about the fumes from various arc welding methods. Among the innovations are high-speed narrow gap welding, tandem SAW, improved tubular wires, low-hydrogen fluxes, and fluxes with ideal MnO content. This presentation will highlight some of these advancements and will discuss potential future innovations.

MORNING BREAK

10:30 a.m. – 10:50 a.m.

Basic Control of Hot-Wire Gas Tungsten Arc Welding for Procedure Development and Production Applications

10:50 a.m. – 11:35 a.m.

Jonathan T. Salkin, Arc Applications, Inc., York, PA

The hot-wire gas tungsten arc welding process continues to gain acceptance over a wide range of industries. Based on growing knowledge of the process, control capabilities are being adapted to generate high-quality welds with competitive deposition rates in more specialized applications and deposit requirements. Process variables to consider will be discussed based on welding requirements, materials, weld geometry, and inspection. Examples of development programs and production applications will be presented covering a range of control capabilities and limitations.

Friction Stir Welding of Aluminum, Titanium, and Magnesium

11:35 a.m. – 12:15 p.m.

Dr. Jorge F. dos Santos, GKSS Forschungszentrum GmbH, Institute for Materials Research, Geesthacht, Germany

Improvements have been made to the friction stir welding process, which have expanded the utility of the process. Metallurgy, tooling, and robotics have all played important roles in this expansion.

LUNCH (PROVIDED)

12:15 p.m. – 1:15 p.m.

Friction Stir Welding of Steels

1:15 p.m. – 2:00 p.m.

Russell J. Steel, MegaStir Technologies, Provo, UT

Welding techniques will be presented for joining steels, stainless steels, and nickel-base alloys through friction stir welding. Orbital welding of pipes will be presented along with linear welding. Mechanical properties of friction stir welded joints and microstructure results will also be shown.

The Impact of Fiber Lasers on the Material Processing Market

2:00 p.m. – 2:45 p.m.

Bill Shiner, IPG Photonics Corp., Oxford, MA

The presentation will be a quick review of the status of fiber technology, power levels, beam properties, and installed base. This will be followed by a review of successful applications in the automotive, aerospace and microelectronic industries, and concluded with a glance at how fiber technology will impact the future.

AFTERNOON BREAK

2:45 p.m. – 3:05 p.m.

Thermal Stir Welding

3:05 p.m. – 3:50 p.m.

Jeff Ding, NASA Marshall Space Flight Center, Huntsville, AL

Thermal stir welding is a new welding process under development at NASA's Marshall Space Flight Center in Huntsville, Alabama. Thermal stir welding is similar to friction stir welding in that it joins similar or dissimilar materials without melting the parent material. However, unlike friction stir welding, the heating, stirring and forging elements of the process can be decoupled, allowing independent, dynamic control of each process element. The separation of the heating, stirring, and forging elements of the welding process allows more degrees of freedom for greater process control.

The Disk Laser Welding Process

3:50 p.m. – 4:35 p.m.

Speaker TBA, TRUMPF, Inc., Plymouth, MI

This session will cover the high power and excellent beam-quality disk laser, which is considered to be the robust and affordable product of the future.

UPCOMING AWS EVENTS

The following are among other AWS conferences and events to be held in 2008. For detailed descriptions, see www.aws.org/conferences.

11th AWS/AA Aluminum Welding Conference

April 15-16, 2008 • Seattle

Welding in Aircraft and Aerospace Conference

September 16-17, 2008 • Seattle

2008 Fabtech Int'l & AWS Welding Show

October 6-8, 2008 • Las Vegas

Thermal Cutting Conference

October 6, 2008 • Las Vegas

New Nondestructive Testing Technologies Conference

October 7, 2008 • Las Vegas

International Thermal Spray Association Conference

October 6-7, 2008 • Las Vegas

RWMA Resistance Welding School

October 2008 • Las Vegas

Welding of Engineering Plastics & Composites Conference

November 11-12, 2008 • Orlando



American Welding Society®

For questions or additional copies of this event brochure, call 1-800-443-9353, ext. 455 (305-443-9353 outside of North America)

CONFERENCE CODE: COAWC

AWS Members: \$550 • Nonmembers: \$680

Each nonmember attendee will receive a two-year complimentary membership in AWS. Your conference registration fee includes all conference sessions, two continental breakfasts, two lunches, and refreshment breaks.

The registration fee does not include hotel accommodations. Hotel accommodations are subject to hotel regulations and are the responsibility of the attendee.

You will receive a CD containing copies of all presentations, an attendee roster, and a speaker roster for post-event interaction and followup.

Each participant will also earn 14 Professional Development Hours (PDHs) for attending the conference.

GUARANTEE

AWS guarantees that you will leave the conference a satisfied customer. If for any reason you are not satisfied, please send a letter to American Welding Society, Director-Conferences and Seminars, 550 NW LeJeune Road, Miami, FL 33126.

LOCATION AND ACCOMMODATIONS

Hilton New Orleans Airport
901 Airline Drive
Kenner, Louisiana 70062

Phone: 504-469-5000 / Fax: 504-466-5473
<http://www.hiltonfamilyneworleans.com/airport.php>

Take advantage of the specially negotiated rate of \$149 for single or double occupancy (\$169 for triple and \$189 for quad). This special rate is also extended to you three days before the conference and three days after the conference (depending on hotel availability). Be sure to mention the American Welding Society to receive this rate. The deadline for reservations at this special price is April 11, 2008. Each reservation must be guaranteed with a first night's deposit or a major credit card. Any room reservation cancelled via the website can be done 24 hours in advance. Any other reservations must be cancelled five days in advance of the arrival date and must be done directly with the hotel. There is no charge for valet or the self-parking garage.

FOUR EASY WAYS TO REGISTER:

- 1. Go online:** <http://www.aws.org/conferences>
- 2. Call:** 1-800-443-9353, Ext. 455, between 8 AM and 5 PM EST.
Please have your AWS membership number and a purchase order number or credit card ready.

- 3. FAX form:** 305-648-1655. Fax one copy per registrant.

- 4. Mail registration form to:**
American Welding Society
P.O. Box 440367, Miami, FL 33144-0367
Mail one copy per registrant.

Note: Registrant information needed for each registrant

Priority Code (from mailing label) _____	Remit Payment To: American Welding Society P.O. Box 440367 Miami, FL 33144-0367
AWS Member No. (if any) _____	
Name _____	
Company _____	
Title _____ <input type="checkbox"/> Business <input type="checkbox"/> Other _____	
Address _____	City/State/Zip _____
Daytime Phone _____	E-Mail _____
Method of Payment: <input type="checkbox"/> Bill Me (AWS members only) <input type="checkbox"/> Bill My Company (Must Include Purchase Order No.) P.O. No. _____	
<input type="checkbox"/> Check <input type="checkbox"/> Money Order <input type="checkbox"/> VISA <input type="checkbox"/> MasterCard <input type="checkbox"/> American Express <input type="checkbox"/> Diners Club <input type="checkbox"/> Discover <input type="checkbox"/> Carte Blanche	
Card No. _____	Signature _____ Exp. Date _____
<input type="checkbox"/> Please send me the FREE AWS Product Catalog. I prefer to receive reminders about seminars via <input type="checkbox"/> E-mail <input type="checkbox"/> Postal mail	

Code	Fee
COAWC	Conference on Automatic Welding

REFUND POLICY

AWS knows your plans can change and offers a flexible refund policy. If you notify AWS at least two weeks before a scheduled conference that you are unable to attend, you will receive a full refund less a \$75 administration/hotel attrition fee. Notification received less than two weeks before the conference will result in a refund less a \$175 administration/hotel attrition fee.

You may send a substitute with no additional fee. Registration fees will not be refunded for no-shows.

Note: AWS reserves the right to cancel any event at its reasonable discretion. In the event of cancellation by AWS, registration fees will be refunded in full. AWS shall have no further liability.

ACCOMMODATIONS FOR THE DISABLED

Pursuant to the Americans with Disabilities Act (ADA), AWS, and the Hilton New Orleans Airport strive to ensure accessibility for all guests. Please inform the hotel when you make your reservations, and also contact the AWS Education Services Department at 800-443-9353, ext 455.

AWS USE ONLY

1. Check # _____
2. Date Rec'd _____
3. Amount _____
4. Account# _____