

AWS National Robotic Welding Conference & Exhibition 2011

Overcoming Obstacles to Automation through Innovation

**Sponsored by the
American Welding Society Milwaukee Section,
AWS D16 Committee, John Deere, Milwaukee Area Technical College
May 24th and 25th
Milwaukee, Wisconsin**

This two day event, with a third bonus day tour leading up to the conference on May 23rd sponsored by Miller Electric and Miller Welding Automation, is meant to benefit anyone considering the use of robots in arc welding applications, or currently using robots and looking to expand or optimize their use. This conference has a special focus in that companies currently using robots in successful manufacturing practices will give presentations on their unique applications in order to further the implementation and development of Robotic Arc Welding. The other unique feature of this conference is that a significant amount of the money raised goes towards scholarships for students entering the welding field. This conference also features a tour and presentation from John Deere about their Automation, and innovations.

The conference, tour and exhibition will feature the latest technologies and manufacturing practices to insure success in these applications, as well as other nontraditional applications. These technologies should also be of value to companies utilizing arc welding robots in more traditional ways.

The conference segment of the program will include professional speakers from a variety of backgrounds, including end users, as well as time to talk to exhibitors from companies that offer support with regard to many of the technologies discussed. The program matter is meant to be inclusive, and benefit the most experienced welding engineer or specialist, as well as the less technically experienced or novice user or buyer, and parties interested in learning more about these processes.

As a special feature our keynote speaker will be Dean Elkins, the Chairman of the Robotic Industries Association, and Senior General Manager at Motoman Inc, who will give a presentation about the way in which robots have been assimilated into the American Manufacturing market space, making American Companies more productive while lower costs, increasing flexibility, and improving a company's chances of competing in the global market place. Scholarships will be awarded to students during the keynote dinner.

Professional Development Hours will be awarded to attendees, as well as a certificate of completion.

If you are interested in exhibiting, registering, or learning more about this event, please contact Karen Gilgenbach, at 262-613-3790, or Karen.gilgenbach@airgas.com

HOTEL REGISTRATION:

For Reservations call 414-481-2400
Or toll free 866-481-2400.

Clarion Hotel & Conference Center
5311 South Howell Avenue
Milwaukee, WI 53207

Room Rate of \$89.00 for attendees



The Clarion Hotel is easily accessible off Interstate 94/894 at the airport exit and we offer complimentary shuttle to and from the airport 24/7 on demand. Our hotel is directly across the street from the airport.

The hotel offers an on site restaurant and lounge, room service, full service gym, business center and indoor pool. All of the guest rooms have microwaves and refrigerators, coffee makers, hair dryers and ironing boards and irons. High speed wireless internet is available throughout the hotel for no charge.

The hotel is minutes from several golf courses, and is close to many popular area attractions, including the **Boerner Botanical Gardens**, the **Bradley Center** arena, **Lake Michigan**, the **Miller Brewing Company** and the **Milwaukee County Zoo**. There are a variety of restaurants and cocktail lounges located in the area. Be sure to visit the on-site **Cork 'N Cleaver Restaurant** and enjoy daily gourmet specials, a selection of wines, Friday Fish Fry and Sunday Brunch. The restaurant also provides **room service** with extensive menu selections.



Milwaukee Area Technical College's ECAM Center:



Milwaukee Area Technical College is a co-sponsor of the National Robotic Arc Welding Conference. Segments of the event will take place at the Center for Energy Conservation and Advanced Manufacturing. This new, \$9 million, 34,000 square-foot applied technology center at the MATC Oak Creek Campus is designed to answer the competitive challenges facing manufacturers.

MILWAUKEE AREA Technical College

May 24th, 2011, Hosted by John Deere

6:15 Meeting at the Clarion hotel to travel to John Deere Horicon
Bus will load at Clarion Hotel & Conference Center, 5311 South Howell Avenue
Milwaukee, WI 53207

7:45-8:00 Welcome at L Building, John Deere Horicon

8:10- 11:50 John Deere Tour and Presentation

The John Deere Tour and Presentation will break into 4 groups, to insure a small enough size for a personal experience. Each group's tour will consist of a tour of the Downtown Assembly Plant, a tour of the Primary Weld Facility, a Weld Simulation Presentation, and a presentation on the Virtual Manufacturing Common Platform Project.

11:50 -1:00 Lunch and an Opportunity to visit the Company Store

1:00-1:35 Overcome Obstacles to Robotic Welding

Gary Tagatz – Welding Engineer

Wacker-Neusen

Beyond the attitude changes needed to accept robotics, issues like part and tooling variation need to be addressed early. The key is to attain an acceptable Return on Investment even when short part runs are involved.

1:35-2:10 The Need for Flexibility and Innovation in the Use of Robot Welding as a Contract Manufacturer

Rick Torn- Corporate Continuous Improvement Project Director

Chuck Francis – Welding Engineer, CWI

Mayville Engineering Corporation (MEC)

An overview of existing capabilities will be given including programming, fixture design, setup, error proofing and aluminum welding. Issues are being addressed through Continuous Improvement and new uses of touch sensing, vision and Rapid Arc.

2:10-2:30 Break

2:30-3:05 Implementation of robotics On the FMTV (Family of Medium Tactical Vehicles) Truck Cab

Ken Ellis – Director of Operations/Engineering

Steve Waldvogel – Senior Mfg. Engineer

Oshkosh Defense

A complete review of this first major installation of robotic arc and spot welding will be done and lessons learned will be shared.

3:05-3:40 Overcoming Obstacles with Hybrid Robotic Welding – The Evolution of Synergic and Adaptive Welding

Paul Denney – Senior Laser Applications Engineer

Lincoln Electric

Robotic hybrid welding processing has been accomplished with independently operated lasers and gas metal arc welding (GMAW) power sources. Digital power sources and advanced solid state lasers (ie. Fiber and disk) have made it possible to

integrate the GMAW operation with the laser. A review of a variety of synergic and adaptive tools that can improve productivity will be done.

3:40 – 5:10 Travel back to hotel

5:10 – 7:00 Reception at Hotel-

This will be a unique opportunity to meet one-on-one with many industry leaders and exhibitors, to gain their valuable insight into your own applications. Please feel free to bring specific information on your own application to the conference.

7:00 – 9:30 Dinner & keynote presentation

"Let The Sparks Fly...50 Years of Robotic Automation and the Future of American Industry"

*By: Dean Elkins – Senior General Manager
 Motoman Inc.
 Chairman RIA*

The presentation will deal with how robots have been assimilated into the American Manufacturing market space. Areas of discussion will include how robots have made companies more productive while lowering costs, increasing flexibility, and improving a company's chances of competing in the global market place.

Dean Elkins is Senior General Manager of Motoman Inc. He has worked in the robotics industry since the early 1980's. He has been employed with Motoman since its inception in 1989 and has held several domestic and international senior management positions. He currently serves as the Chairman of the Robotic Industries Association (RIA). Elkins has been on the RIA Board of Directors since 2000.

May 25th, 2011: Hosted by Milwaukee Area Technical College

7:00 – 7:30 Exhibit viewing at MATC:

This is a unique opportunity to see robotic demonstrations, and talk to industry leaders about their technologies, and how they may apply in your particular application.

7:45 – 8:15 Welcome

8:15 – 8:50 Deep Groove Robotic GMAW of Thick Walled Tubes Using Inconel Wire

*Bob Broman – Welding Engineer – Helgesen Industries Inc.
Larry Gross – Lead Instructor – Milwaukee Area Technical School
Ken Rawson – President of Advanced Welding & Manufacturing, Inc.*

This presentation chronicles the development of robotic GMA welding in deep groove joints of thick walled tubes using Inconel wire. This process demonstrates an automated alternative solution to Shielded Metal Arc Welding (SMAW) and Submerged Arc Welding.

8:50 – 9:25 Before & After Robotic Welding

Lance Guyman – Engineering Manager – Wolf Robotics

This presentation will focus on case studies of manufacturers that are increasing throughput & decreasing inventory by improving material handling before and after robotic welding operations, and include information pertinent to safety & ergonomics for quick load / unload, weld process control & data gathering in manual welding operations,

and automated grinding. For very large fabrications, a novel approach will be presented where the various robotic fabrication operations are moved TO the stationary work piece location.

9:25 – 9:45 `Exhibit Viewing and Open Networking

This is a unique opportunity to see live robotic demonstrations, and talk to industry leaders about their technologies, and how they may apply in your particular application.

9:45 – 10:20 Remote Robotic Fabrication

Tim McJunkin – Research & Design Engineer

Denis Clark - Research & Design Engineer

Corrie Nichol - Research & Design Engineer

Eric Larsen - Research & Design Engineer

Idaho National Laboratory

Robotic welding systems that can accommodate many weld positions and wide tolerances in component size and placement, require a carefully considered architecture. The Yucca Mountain Waste Package Closure System is one such system. This system integrates commercial robotics, welding, inspection, and repair components with custom components and software to demonstrate the closure of a waste package in an environment that precludes any human entry. The results of this successful application suggest a leveraged architecture for future advanced fabrication and in-service maintenance machines.

10:20 – 10:55 Fixtures and Integration for Robotic Arc Welding

Todd Hansen – Sales Manager

Chris Kincaid – Vice President Sales and Marketing

Melton Machine & Control Company

What does it take to design, build and integrate fixtures for a successful robotic welding project? There is no need to reinvent the wheel. Welding fixture fundamentals, basic design requirements and trade-offs will be presented along with factors that limit successful integration.

10:55 – 11:30 How to Leverage Continuous Improvement to Wring More Profit Out of Your Robots

Nathan Trumpinski - Continuous Improvement Manager

HCC Inc.

Learn how continuous improvement projects for robotic welding cells are selected, managed and reported.

11:30 – 12:00 AWS D16 Robot Committee Update on Safety, integration, and Qualification/Certification Standards

Jeffrey Noruk – President, Servo Robot Corporation

Larry Gross – Lead Instructor, Milwaukee Area Technical College

Learn what this AWS committee is doing in the areas of robotic welding cell integration, safety, and Certified Robotic Arc Welding Technician standards and how being familiar with these can contribute to your success whether you are installing your first or 100th robotic arc welding cell.

12:00 – 1:15 Lunch & exhibits

1:15-1:50 “How Big is Too Big” Robotic Positioners

Doug Juhl- Welding Engineer / Project Manager

Easom Automation

This session will discuss “Understanding mass properties; and how to properly select the right robotic positioner”.

1:50 – 2:25 Choosing the right peripherals for your welding cell

Paul Pfingston – *National Sales Manager*

Abicor Binzel Inc.

This presentation will focus on the equipment choices and criteria used in selecting the proper peripheral devices to equip a welding cell for maximum effectiveness.

2:25-2:35 Break

2:35-3:10 Automating High Mix – Low Volume Heavy Welding Applications

Gord Attridge – *Vice President Sales and Marketing*

Dean Bower – *Account Executive*

Nu-Tech Engineering Inc.

Fabricators of heavy weldments face tremendous opportunities for productivity and quality and equally tremendous challenges in flexibility when implementing automated welding systems. This presentation will investigate how to maximize productivity and flexibility when planning a system for heavy welding automation.

3:10 – 3:45 Back to the Future – He who ignores history is doomed to repeat it

Chris Anderson – *Arc Welding Market Segment Manager, Motoman Inc.*

John Hinrichs – *Chairman of the Board – Friction Stir Link Inc.*

2011 marks the 50th year anniversary of the industrial robot. Arc welding robots gained popularity in the late 70's and early 80's. Some of the early applications and technology will be reviewed to highlight what application tenets still hold true and what types of problems have been eliminated as technology advanced. Both speakers have been involved in the early adoption of arc welding robots; one represents a robot user and the other a robot supplier.

3:45 – 4:00 Wrap-up, Evaluation

AWS Robotic Welding Conference & Exhibition 2011 Registration / Fees:

To register for this event, please fill out the following form and include with check or money order to:

AWS- Milwaukee Section
 C/O Bob Bruss, Treasurer
 S27 W16260 Woods Rd.
 Muskego, WI 53150
 P: (414) 708-2010
 E: rbruss@sbcglobal.net

Or fax attn Karen Gilgenbach at:
 414-527-4904

Registration / Exhibit Form:

Name: _____ Email: _____

AWS Member (y/n) _____ AWS Member Number: _____

Title: _____ Company: _____

Address (bus / home?) : _____

City: _____ State: _____ Zip: _____

Credit Card Type (Visa, Mastercard, AMEX, Discover): _____

Credit Card Number: _____

Billing Address: _____

Expiration Date on Card: _____

Daytime phone: _____ Fax: _____

Type of Business: _____

Primary Job Function: _____

Industry: _____

Would you like to attend the Miller Electric Automation tour on May 23rd? (Yes / No) _____

	Member:	Nonmember:	Qty:	Total:
Attendee fee	\$395	\$495	_____	_____
Exhibitor Fees*	\$595	\$595	_____	_____
Student	\$50 / day	\$95 / day	_____	_____
		Total:	_____	_____

Signature: _____

Special Considerations: In accordance with the Americans with disabilities act (ADA) we strive to accommodate any additional needs. Please contact us at 1-262-613-3790 for further information or to make us aware of a possible concern. * An exhibitor fee includes one attendee

Robotic Welding Conference History:

The conference was started by John Hinrichs of AO Smith Corporation through a partnership with the University of Wisconsin- Milwaukee and its Continuing Education Program in 1983. The mission of the conference was to present new and emerging technology in the areas of welding and automation. The conference was unique in that it did not have a call for papers but instead was an invited list based on what technologies were viewed as being cutting edge at the time. The conference prospered for many years in downtown Milwaukee but in 1992 the attendance was starting to decline (can you spell Milwaukee in February?) and the decision was made to move to Florida.

This change in venue to Orlando was done in conjunction with the American Welding Society (AWS) and with the addition of Paul Ramsey (former AO Smith Welding Research Manager and AWS President) as Co-Chairman. The next few years the emphasis was placed even more on introducing very new technologies as evidenced by the first presentation in North America about Friction Stir Welding at the 1994 conference. In 1997 a partnership was formed with the AWS D16 Committee on Robotic and Automatic Arc Welding to assist in the running of the conference and highlighting the work being done by this group in the areas of standards. The name of the event was changed to the AWS 1st Robotic Arc Welding Conference and Exhibition.

In 1999 Jeffrey Noruk, D16 Chairman, joined John and Paul as a co-chairmen and continued to strengthen the relationship with the D16 committee via the presentation of educational material associated with standards on Safety, Do's and Don'ts, Qualification and Certification of Personnel and Robotic Equipment Interfacing.

In 2005 we came full circle with the conference moving back to Milwaukee, but this time in conjunction with the local AWS Milwaukee Section and the Milwaukee Area Technical College. This conference has been held every other year (the "odd years"), and is modeled after the highly successful Detroit Sheet Metal Conference which is held in "even years". Profits from this conference will go towards scholarships for the technical colleges in the greater Milwaukee area supported by the local AWS section. The format of a conference and exhibition will be maintained as well as the close ties to the AWS D16 committee