

Fall

# EWI MEMBER DAY

Virtual Event

October 26, 2021 | 10AM - 1:30PM EDT



## AGENDA

10:00 AM	Welcome, <i>Henry Cialone, CEO</i>	
10:10 AM	Keynote: <b>Manufacturing and the Green Economy</b> , <i>Jon Jennings, Director, Marketing &amp; Product Management</i>	
10:50 AM	Break	
11:00 AM	Break-out Session 1 (Choose one session to attend. See page 2 for details.)	
	Topic 1:	<b>Applications of Data Science for Smart Manufacturing</b> <i>Luke Mohr, Applications Engineer, Automation, DCA &amp; Metrology &amp; Inspection</i>
	Topic 2:	<b>Innovations in Micro Welding for Unique Product Applications</b> <i>Jeff Ellis, Senior Technology Leader, Ultrasonics</i>
	Topic 3:	<b>Introducing EWI's Cold Spray Center of Excellence</b> <i>Howie Marotto, AM Business Director</i>
11:45 AM	Break	
12:00 PM	EWI Tele-welding Video	
12:10 PM	Break-out Session 2 (Choose one session to attend. See page 3 for details.)	
	Topic 1:	<b>Advancements in Dissimilar Metal Welding: Aluminum to Steel</b> <i>Mike Eff, Senior Engineer, Arc Welding, FSW, Materials, RSSW, &amp; Ultrasonics</i>
	Topic 2:	<b>Coaxial Wire Laser Directed Energy Deposition: A Game Changer for Additive Manufacturing</b> <i>Eric Stiles, Principal Engineer, AM &amp; Lasers</i>
	Topic 3:	<b>Automation: Helping address workforce challenges</b> <i>Matt Malloy, Engineering Group Leader, Automation, DCA &amp; Metrology &amp; Inspection</i>
1:00 PM	Regroup/Discussion and Questions	
1:15 PM	Wrap-up	

# BREAKOUT SESSION 1

Please choose one session to attend.

## TOPIC 1:

### Applications of Data Science for Smart Manufacturing

Data Science Applications in Manufacturing

EWI is applying data science to help our customers in new ways. We will detail two use cases:

- *process model validation using process monitoring for large format additive, and*
- *smart forming: using machine learning to increase operational efficiency in the forming process.*

**Presented by:** *Luke Mohr, Applications Engineer, Automation, DCA & Metrology & Inspection*

## TOPIC 2:

### Innovations in Micro Welding for Unique Product Applications

EWI has provided solutions for small scale materials joining to many markets, including medical, consumer products, and automotive. These included devices that were ingestible, injectable, and functioned as sensors. In this presentation, EWI will present plastic and metal welding solutions for parts as thin as 0.0005-inch.

**Presented by:** *Jeff Ellis, Senior Technology Leader, Ultrasonics*

## TOPIC 3:

### Introducing EWI's Cold Spray Center of Excellence

Howie Marotto, AM Business Director, will provide an overview of EWI's latest addition to its portfolio of AM technologies, Cold Spray. Furthermore, he will elaborate on how EWI intends to develop and operate the world's only commercial Cold Spray Center of Excellence in the world in Buffalo Manufacturing Works' spaces.

**Presented by:** *Howie Marotto, AM Business Director*

# BREAKOUT SESSION 2

Please choose one session to attend.

## TOPIC 1:

### **Advancements in Dissimilar Metal Welding: Aluminum to Steel**

Joining of dissimilar metals is a key enabler for the optimization of vehicle designs. New generation steels, as well as aluminum and titanium alloys, all offer unique combinations of properties that enable structural lightweighting. Combining these metals is obviously required if full advantage of the range of metallic solutions available is to be taken. For near-term applications, interest has focused on joining aluminum to steel. Defining appropriate joining methods and processing conditions requires first understanding the challenges associated with that specific material combination. In this paper, metallurgical challenges for the aluminum to steel are first reviewed, as well as paths to overcome these challenges. Specific joining approaches incorporating these paths are then described, with examples for specific processes. These include inertia, linear, and friction stir welding. Key elements of success include rapid thermal cycles and an appropriate topography on the steel surface.

*Presented by: Mike Eff, Senior Engineer, Arc Welding, FSW, Materials, RSSW, & Ultrasonics*

## TOPIC 2:

### **Coaxial Wire Laser Directed Energy Deposition: A Game Changer for Additive Manufacturing**

Over the years, EWI's developmental work building large objects using various additive manufacturing (AM) technologies has identified multiple challenges and opportunities. Those possibilities prompted EWI to commit internal R&D funding to explore and develop a high power, high deposition rate laser solution for large object additive manufacturing. This presentation describes the motivation for development of a wire additive laser solution, the challenges of optical design for coaxial wire delivery, how the design was implemented, and work completed to date for high deposition rate additive manufacturing.

*Presented by: Eric Stiles, Principal Engineer, AM & Lasers*

## TOPIC 3:

### **Automation: Helping address workforce challenges**

Are you struggling to find workers? You're not alone. This presentation will show how EWI's Automation program has been structured to help manufacturers of all sizes leverage technology to help address workforce challenges in ways that are beneficial to both the employer and employee.

*Presented by: Matt Malloy, Engineering Group Leader, Automation, DCA & Metrology & Inspection*

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