



**Ninth International EWI/TWI Aerospace Seminar on Joining of Aerospace Materials**

**Wednesday, September 26—Thursday, September 27, 2018**

**Buffalo, NY USA**

**Wednesday, September 26, 2018**

**Chairman Ian Harris, EWI**

8: 30 AM Coffee

9-9:20 AM Welcome to event - EWI and Moog Inc.

**Session 1 – Welding Technology 1**

9:20-9:50 AM Linear Friction Welding: Aeronautical Structural Part Application, *Y. Sadallah (ACB)*

9:50-10:20 AM Critical Factors Affecting the Quality of Electro-Spark Deposits on Nickel-Base Superalloys, *Jerry Gould and Kate Namola (EWI)*

10:20-10:50 AM On the Benefits of Low Force Welding Over Traditional Fusion/Solid-State Bonding Processes and Its Potential Future Applications, *Simon Jones (Manufacturing Technology, Inc.)*

10:50-11:00 AM Coffee

**Session 2 – Additive Manufacturing 1**

11:20-11:50 AM Overcoming printing challenges in difficult to weld nickel and cobalt alloys, *Satyajeet Sharma, Sudip Bhattacharya, Kumar Kandasamy, Shawn Kelly (Oerlikon)*  
*(Oerlikon AM)*

11:50 AM-12:20 PM A Review of Open Architecture Additive Manufacturing Focusing on Laser Metal Deposition for Large Net Shape Components, *Rob Scudamore (TWI)*

12:20-12:40 PM Automation of D.O.E. Evaluation for Laser Powder Bed Fusion Qualification, *Jason Jones (Moog)*

1:00 PM Lunch

**Session 3 - Welding Technology 2**

1:40-2:10 PM Electron Beam and Laser Welding for Safety Critical Space Applications, *Tim Mitchell (TWI), Chris Allen (TWI), Mike Nunn (TWI), Andy Norman (ESA)*

2:10-2:40 PM Friction Stir Welding Joints of Titanium Alloys: A Holistic Approach to Process-Structure Properties, *K. Gangwar (Tesla), M. Ramulu (UW), Daniel Sanders (Boeing)*



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2:40-3:10 PM Applications of Reducing Clamping in Self-Reacting FSW of Al, *Scott Rose (Boeing), John Baumann and Sean Thuston (retired from Boeing)*

3:10 PM Coffee

**Session 4 – Automation and Robotics 1**

3:40-4:10 PM Robotics and Automation for Aerospace, *Whitney Moon (Genesis Systems)*

4:10-4:40 PM Quality Assurance Systems for Additive Manufacturing, *Thomas Gruenberger (plasmo USA LLC)*

4:40 PM-5:10 PM Aerospace Tier 1 Perspective, *Martin Philo (GKN Aerospace)*

5:10 PM Closing

**Please join us for the conference dinner (paid for as part of conference fee):**

**Pearl Street Grill – 4<sup>th</sup> floor ballroom**

***(less than 15 mins walk from hotel)***

6:30 PM Arrival and drinks at Pearl Street Grill (drink ticket and cash bar)

7:00 PM Conference dinner

10:00 PM Return to hotel



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**Chairman, Richard Freeman, TWI Ltd**

8:30 AM Coffee

8:50 AM Welcome

**Session 5 – Additive Manufacturing 2**

9:00-9:30 AM Large Scale Metal AM, *Doug Rhoda (DMS)*

9:30-10:00 AM AM Powder to Part: An Electron Beam Melting Case Study, *Rutuja Samant (EWI)*

10:00-10:30 AM Applying Femtosecond Lasers to Advance Manufacturing, *Jason Jones (Moog)*

10:30 AM Coffee

**Session 6 – Forming Technology 1**

11:00-11:30 AM Advances in the Net-Shape Incremental Forming Technology for Aerospace Applications, *Hyunok Kim (EWI)*

11:30 AM-12:00 PM Metal Spinning Processes and Manufacturing Solutions, *Richard Morganti (Spincraft)*

12:00-12:30 AM Superplastic Forming of aluminum and Titanium Alloys, *Serhat Kaya (Luxfer Superform)*

12:30 PM Lunch

1:10 PM Buses to Moog from Embassy hotel

1:40 PM Check in at Moog

2:00 PM Tour of Moog

5:00 PM Buses back to Embassy hotels

5:30 PM Buses arrive at hotel, event concludes