

# TMS PRESENTERS

**Monday, March 20, 2023**

## **MORNING**

8:30–9:00 a.m. **SDCC–29C**  
Enabling Multimaterial Joining in Lightweight Automotive Structures Using Novel High Velocity Riveting Process

**Presenter:** Benjamin J. Schuessler

9:50–10:10 a.m. **SDCC–24A**  
Friction Stir Additive Manufacturing of Al-5083

**Presenter:** David Garcia

## **AFTERNOON**

2:00–2:20 p.m. **SDCC–29A**  
Enhanced Tensile and Tear Toughness Properties of Thin-Wall Vacuum – Assisted High-Pressure Die-Cast Aural-5 Alloy by Friction Stir Processing

**Presenter:** Avik Samanta

3:20–3:45 p.m. **SDCC–29C**  
Numerical Analysis of High-Velocity Riveted (HVR) Joints through Finite Element Modeling Supported by Experimental Data

**Presenter:** Daniel Ramirez Tamayo

4:40–5:00 p.m. **SDCC–30C**  
Optimization of the Microstructure and Performance of Aluminum Alloy Cold Spray Coatings on Magnesium Alloys

**Presenter:** Sridhar Niverty

## **EVENING**

5:30–6:30 p.m. **SDCC–Exhibit Hall G**  
Microstructural Evolution, Mechanical Properties and Faster Aging Kinetics in Friction Extruded AA6061 and AA7075 Alloys

**Presenter:** Rajib Kalsar

- 5:30–6:30 p.m. **SDCC–Exhibit Hall G**  
Local Formability Improvement of Commercial Aluminum Sheets Using Friction Stir Processing  
**Presenter:** Wahaz Nasim
- 5:30–6:30 p.m. **SDCC–Exhibit Hall G**  
Meshfree Simulation and Analysis of Contact Conditions and Microstructure Evolution Shear Assisted Processing and Extrusion (ShAPE) of Aluminum Alloy 7075  
**Presenter:** Ayoub Soulami
- 5:30–6:30 p.m. **SDCC–Exhibit Hall G**  
Local Formability Improvement of Commercial Aluminum Sheets Using Friction Stir Processing  
**Presenter:** Wahaz Nasim

## Tuesday, March 21, 2023

### MORNING

- 8:00–8:20 a.m. **SDCC–29A**  
Smoothed Particle Hydrodynamics Model for Friction Stir Processing of 316 L Stainless Steel: Process Modeling and Microstructure Evolution Analysis  
**Presenter:** Ayoub Soulami
- 9:55–10:20 a.m. **SDCC–32A**  
Shear Assisted Processing and Extrusion of Unhomogenized Aluminum Alloy 6063 Castings with High Iron Content  
**Presenter:** Scott Taysom
- 10:00–10:20 a.m. **SDCC–29A**  
A Coupled SPH-FEM Framework to Predict Residual Stresses during Friction Stir Processing  
**Presenter:** Lei Li
- 10:20–10:45 a.m. **SDCC–32A**  
Solutionization via Severe Plastic Deformation: Effect on Natural Aging in an Al-Mg-Si-(Mn) Alloy  
**Presenter:** Brian Milligan
- 10:20–10:40 a.m. **SDCC–29C**  
Development of Solid-State Processing of Electrical Steels for Cost-Efficient Electric Motors  
**Presenter:** Shivakant Shukla
- 10:55–11:15 a.m. **SDCC–24A**  
Solid State Additive Manufacturing of Oxide Dispersion Strengthened FeCrAl Alloy through Metal Extrusion Method  
**Presenter:** Saamyadeep Jana

## AFTERNOON

- 3:30–3:50 p.m. **SDCC–29A**  
Friction Stir Welding of Nickel-Based Superalloys  
**Presenter:** Mageshwari Komarasamy
- 4:25–4:45 p.m. **SDCC–30C**  
Solid Phase Processing of Mg-Al-Mn-Ca for High Strength and Ductility  
**Presenter:** David Garcia

## Wednesday, March 22, 2023

## MORNING

- 8:30 a.m.–12:00 p.m. **SDCC–28D**  
Deformation Mechanisms in Gen-IV Candidate Structural Steels Studied by In-Situ Micromechanical Testing Techniques  
**Presenter:** Tanvi Anil Ajantawalay
- 8:55–9:20 a.m. **SDCC–32A**  
Improving the Mechanical Properties of Cast Aluminum via Ultrasonication-Induced Microstructural Refinement  
**Presenter:** Katherine E. Rader
- 9:45–10:05 a.m. **SDCC–23A**  
Microstructural Evolution of Solid State and Liquid State Advanced Manufacturing Processes for 316L Stainless Steel  
**Presenter:** Isabella van Rooyen
- 9:45–10:05 a.m. **SDCC–29C**  
Meshfree Simulation of Solid Phase Processing and Microstructure Analysis Using a Dislocation Density-Based Constitutive Model  
**Presenter:** Lei Li
- 10:30–10:50 a.m. **SDCC–29A**  
Embedded Anchoring of Multi-material Assemblies by Friction Riveting Process  
**Presenter:** Md. Reza E. Rabby

## AFTERNOON

- 2:25–2:50 p.m. **Hilton–Aqua 303**  
No Ball milling Needed: Alternative ODS Steel Manufacturing with Gas Atomization Reaction Synthesis (GARS) and Friction-Based Processing  
**Presenter:** Dalong Zhang
- 2:35–2:55 p.m. **SDCC–29C**  
A High-Speed Rotational Diamond Anvil Cell for In-Situ Analysis of Microstructural Evolution of Metallic Alloys during Solid Phase Processing  
**Presenter:** Arun Devaraj

- 2:40–3:00 p.m. **Hilton–Sapphire P**  
Exploring Joining Mechanism for Immiscible System: Friction Stir Welding of Pure Mg and Pure Fe  
**Presenter:** Hrishikesh Das
- 3:50–4:20 p.m. **SDCC–29C**  
In-situ Observation of the Effects of Thermo-Mechanical Processing on Microstructure Evolution in Ferrous and Non-Ferrous Materials: An Abridged Summary of Results Obtained Using the FlexiStir Instrument  
**Presenter:** Jorge F. dos Santos
- 4:00–4:20 p.m. **Hilton–Sapphire P**  
Deformation Mechanisms in Cu-Nb Nanolayered Composite Under Pico-indentation and Tribological Testing  
**Presenter:** Mayur Pole

### **EVENING**

- 5:00–5:20 p.m. **SDCC–29A**  
The Role of Fracture Properties on Lap Joint Strength of Friction Stir Welded AA 7055-T6 Sheets  
**Presenter:** Kranthi Balusu

## **Thursday, March 23, 2023**

### **MORNING**

- 8:30–8:50 a.m. **SDCC–31C**  
Friction Extrusion of Lead-Free Brass-Graphite Composites Made from Powder Feedstock  
**Presenter:** Md. Reza E. Rabby
- 8:30–8:50 a.m. **SDCC–29A**  
High Speed Butt Joining of 1” Thick 2139-T8  
**Presenter:** Piyush Upadhyay
- 9:20–9:40 a.m. **SDCC–29C**  
Local Modification of Microstructure and Mechanical Properties in 7000 Series Al Alloys Achieved by Friction Stir Processing  
**Presenter:** Tanvi Anil Ajantiwalay
- 11:10–11:30 a.m. **SDCC–31C**  
Synthesis of Aluminum/Graphene Composites with Enhanced Electrical Properties through Shear Assisted Processing and Extrusion  
**Presenter:** Aditya K. Nittala

11:10–11:30 a.m. **SDCC–27B**  
No Ball Milling Needed: Revamping Fabrication Route of ODS Steel Plate with Cold Spray and Friction Stir Processing  
**Presenter:** Dalong Zhang

11:45 a.m.–12:05 p.m. **SDCC–23A**  
Sintering Process Optimization for FeCrAl Alloys in Metal Extrusion Additive Manufacturing  
**Presenter:** Amrita Lall

### **AFTERNOON**

2:00–2:20 p.m. **SDCC–31C**  
Recyclable Aluminum Metal Matrix Composites (MMC) for Electric Vehicle (EV) Powertrain Applications  
**Presenter:** Mert Efe

2:40–3:00 p.m. **SDCC–29A**  
Friction Extrusion of Thermoplastics: Manufacturing and Recycling  
**Presenter:** Xiao Li

3:00–3:20 p.m. **SDCC–29A**  
In-Situ Friction Stir Forging: An Innovative and Alternative Approach Towards Gear Fabrication  
**Presenter:** Hrishikesh Das

4:00–4:20 p.m. **SDCC–29A**  
Robust Temperature Control for Shear Assisted Processing and Extrusion (ShAPE)  
**Presenter:** WoongJo Choi