

# **International Automotive Body Congress (IABC ADIM 2025 TROY)**

Presentations

Troy, Michigan, USA  
24-25 September 2025

**Editors:**

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SEPTEMBER 24-25, 2025

Michigan State University (MSU) Management Education Center, Troy, Michigan, USA

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**PROGRAM – In Person ONLY**

**Agenda Below:**

**Duration of Each Presentation – 30 min.**

## **September 24**

**8:00 am to 10:00 am - Booth Set up.**

## **September 24:**

8:30 am - Registration

### **Room – Amphitheater 101**

**9:30 am - 12:30 pm - Plenary Session, AI Empowered Product Development & Manufacturing**

**Chair – Derek Patterson, Global Chief Body Architect, General Motors**

**9:30 am Welcome & Introduction**

**Derek Patterson**, Global Chief Body Architect  
General Motors

**9:45 am**

**Revolutionizing Manufacturing: The Role of AI in Driving Efficiency and Innovation...1**

**Tam Ly**, Executive Director, Manufacturing Engineering, GA, Robotics & AI  
Global General Assembly and Manufacturing Engineering  
General Motors

**10:15 am**

**Evolving Aluminum Technology for Vehicle Closures and Structures...13**

**Herve Gehanno**, Vice President Commercial, Global Automotive  
**JP McGuire**, Global Director – Automotive, Commercial Transportation/Industrial, and Brazing  
Product Technology  
Arconic



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10:45 am - 11:15 am – Coffee Break

11:15 am

**Stellantis: Challenges of sustainability...21**

**Jugraj Singh**, Senior Technical Specialist - Metals

**Michele Maria Tedesco**, Global responsible for Metals & Anti corrosion

*Stellantis*

11:45 am - Q & A Discussions

12:30 pm - 1:30 pm – Lunch

**1:30 pm – 5:00 pm, AI Enabled Digital Manufacturing Systems**

**Chair – Junjie Ma, PhD, Senior Researcher, General Motors**

1:30 pm

**Improving welding productivity with AI-Based Vision...32**

**Charles Caristan, PhD**, Senior Global Market Director

**Zongyao Chen, PhD** Senior Research Scientist,

*Air Liquide*

2:00 pm

**Porosity Reduction in Welding of Cast Aluminum Alloys Using Dynamic Beam Laser...45**

**Wenda Tan, PhD**, Associate Professor

**Guanjin Yan**, Graduate Student Research Assistant

*University of Michigan*

2:30 pm

**Optimizing Handheld Laser Welding: Analyzing the Effects of Laser Power and Wobble Optic Parameters...56**

**Elliott Ash**, Product Manager – Laser Solutions

*Lincoln Electric*

3:00 pm – 3:15 pm Coffee Break



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3:15 pm

**Recent research in Laser Welding & Ablation at GM R&D...69**

**Junjie Ma, PhD**, Senior Researcher

**Mary Gilliam, PhD**, Staff Reseracher

**Michael Lukitsch, PhD**, Senior Researcher

**Hui-ping Wang, PhD**, Adavanced Technogy Archtect

**Blair Carlson, PhD**, Manager

*General Motors*

**Justin Dakka**, Graduate Student

**Jay Oswald, PhD**, Associate Professor

*Arizona State University*

3:45 pm

**Laser Cutting Technology Advancement - Detailing Advantages of Coil Fed Laser Blanking...N/A**

**Jay Finn** Sales Engineer / LaserCoil Product Manager

*Nidec Automatic Feed Company*

4:15 pm

**The Effect of Strain Rate and Temperature on Warm Forming Gen III 980 Steel...85**

**Trey Leonard, PhD**, Chief Engineer

*Standard Mechanics, LLC*

4:45 pm

**Effectively Assessing Formability for Transitioning Dual Phase to Multiphase 980 and 1180 MPa Grades...98**

**Lindsay Brown**, Product Application Engineer

*United States Steel Corporation*

**5:15 pm - 6:45 pm – Reception at the US Steel Applications Center**



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## **September 25**

9:00 am - Registration

### **9:00 am - 12:30 pm – Advanced Materials Technologies**

**Chair, Jason Coryell, Engineering Group Manager, General Motors**

**9:00 am**

**Burst Analysis of Injection Molded Short Fiber Reinforced Thermoplastic Parts...111**

**Chunfu Lin, PhD**, Thermoplastic Material Technical Specialist  
General Motors

**9:30 am**

**Influence of Pre-Strain on Sheared Edge Fracture Between DP and G3 Advanced High Strength Steels...121**

**Hua-Chu (Michael) Shih PhD**, Senior Researcher  
**Justin Lutz**, Engineering Manager  
US Steel Corporation

**10:00 am**

**Advanced Adhesive Material Failure Model Incorporating Bondline Gap Effect...129**

**Liqiang Lin, PhD**, Adhesives Material Technical Specialist  
**Kathy Wang, PhD**, VDDV Material Focus Group Leader Technical Specialist  
General Motors

**10:30 am – 11:00 am Coffee Break**

### **11:00 am - 12:30 pm – Advanced Materials Characterization**

**Chair, Jugraj Singh, Senior Technical Specialist - Metals, Stellantis**



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11:00 am

**Improve Aluminum Springback Prediction Accuracy with Comprehensive Material Testing and Calibrations...137**

**Zhi Deng, PhD**, Engineering Manager

**Raj Dasu**, Director

*Commonwealth Rolled Products*

11:30 am

**Advanced Testing and Simulation Methods for Prediction of Gen3 Steel Spot Weld Separation...146**

**Tingting Zhang, PhD**, CAE Material Technical Specialist-Welding & Mechanical Fasteners  
**Kathy Wang, PhD**, VDDV Material Focus Group Leader Technical Specialist

**Jason Coryell**, Engineering Group Manager

*Advanced Materials Technology and Virtualization*

*General Motors*

**Hassan Ghassemi-Armaki, PhD**, Staff Researcher

*Materials & Manufacturing Systems Research Laboratory*

*General Motors R & D*

12:00 pm

**Fatigue Behavior of AE44 High Pressure Die Cast Magnesium Alloy and Simulation...157**

**Yi Liu, PhD**, Metallic Materials and CAE Materials Technical Specialist

**Jason Coryell**, Engineering Group Manager

*Advanced Materials Technology and Virtualization,*

*General Motors*

**Qichao Zheng, PhD**, Virtual Engineer

**Haiyan Li, PhD**, Global Technical Specialist

**Melani Wright**, Engineering Group Manager

*Casting Component Durability & Fatigue, General Motors*

**Apoorvachandra S.G.**, Materials Engineer

**Ajayaghosh Maniyan**, Lead Materials Engineer

*Tata Consultancy Service Ltd,*



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12:30 pm – 1:30 pm – Lunch

**AFTERNOON SESSION: 1:30 PM – 5:00 PM**

**Technical Sessions Product Introductions, Simulation & Modeling**  
**Chair – Sudip Bhattacharjee, PhD, Supervisor, Ford Motor Company**

1:30 pm

**Enlighten: A Novel Holistic Topometry Based Optimizer for the Design of Lightweight Crash Structures...165**

**David Russell**

Managing Director  
Vortex CAE

2:00 pm

**Improving Range and Payload Capacity of e-LCV with AHSS...176**

**Tianfu Wang, PhD, Project Manager, Fayçal Nabil, Senior Research Engineer, Matthieu Amblard, PhD, R & D Program R&D Program Leader**  
*ArcelorMittal*

2:30 pm

**Modeling of Instrument Panel Skin Materials...187**

**Vesna Savic, PhD, Advanced Senior Materials Engineer, Gowrishankar Ravichandran**

*General Motors*

**Karthigan G**

*Tata Consultancy Services*

3:00 pm – 3:30 pm Coffee Break

3:30 pm

**Iso-Geometric Analysis (IGA) of Automotive Structures...196**

**Sudip Bhattacharjee, PhD, Naim Sassi, PhD, Colin Johnston**  
*Ford Motor Company*



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**Julian Santini**

*Ansys Inc*

**4:00 pm**

**Strength Evaluation of MIG-Welded Advanced High Strength Steel: Experimental and Numerical Insights from Coupon to Component Level...207**

**Tae Hwa Lee, PhD**, CAE Technical Specialist

**Tingting Zhang, PhD**, CAE Material Technical Specialist-Welding & Mechanical Fasteners

**Kathy Wang, PhD**, VDDV Material Focus Group Leader Technical Specialist

**Jason Coryell**, Engineering Group Manager

*General Motors*

**4:30 pm**

**Discussions & Closing Remarks**

**Darren Van Houzen**, Side Closures Architect, Strategic Vehicle Integration

*General Motors*

**5:00 pm - Adjournment**



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