

International Automotive Body Congress (IABC ADIM 2025 TROY)

Papers

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...N/A

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

10:15 am

Continuing a History of Aluminum Innovation to Address Automotive Challenges...N/A

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



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Program committee and the Board of Directors reserve the right to amend this program anytime without notice



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10:45 am - 11:15 am – Coffee Break

11:15 am

Stellantis: Challenges of sustainability...N/A

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/ML-Powered Vision...1

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...11

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...N/A

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...N/A

Junjie Ma, PhD, Senior Researcher
Mary Gilliam, PhD, Staff Reseracher
Michael Lukitsch, PhD, Senior Researcher
Hui-ping Wang, PhD, Adavanced Technogy Architect
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...19

Jay Finn Sales Engineer / LaserCoil Product Manager
Nidec Automatic Feed Company

4:15 pm

Coupling of Temperature and Dynamic Loading of AHSS...40

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...N/A

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...N/A

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...45

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...N/A

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...54

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...N/A

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...61

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...N/A

David Russell

Managing Director
Vortex CAE

2:00 pm

Improving Range and Payload Capacity of e-LCV with AHSS...N/A

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...N/A

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...68

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...79

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...N/A

Darren Van Houzen, Side Closures Architect, Strategic Vehicle Integration

General Motors

5:00 pm - Adjournment



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