



Thank You to Our Sponsors



Silver

DENSO
Crafting the Core

Bronze

THERMO
ANALYTICS

Conference Supporter

FEV

FORVIA


Exhibitors

AVL	Q Corporation
BONTAZ	Saint-Gobain
Buehler Motor Inc.	Saleri Mexico
Calyos	SBS Drivetec Inc.
Convergent Science Inc.	Schrader Pacific Advanced Valves
DBK USA Inc.	Seoul Industry Engineering
Dynalene Inc.	Shin Etsu Silicones
Embiome Co. Ltd.	Simerics Inc.
Gamma Technologies LLC	Sonceboz SA
Husco	SPAL USA
Hutchinson	ThermoAnalytics Inc.
Johnson Electric North America	TLX Technologies
Magna Powertrain USA Inc	TOffeeAM Ltd.
Modine Manufacturing Company Inc.	

Chat with the Experts

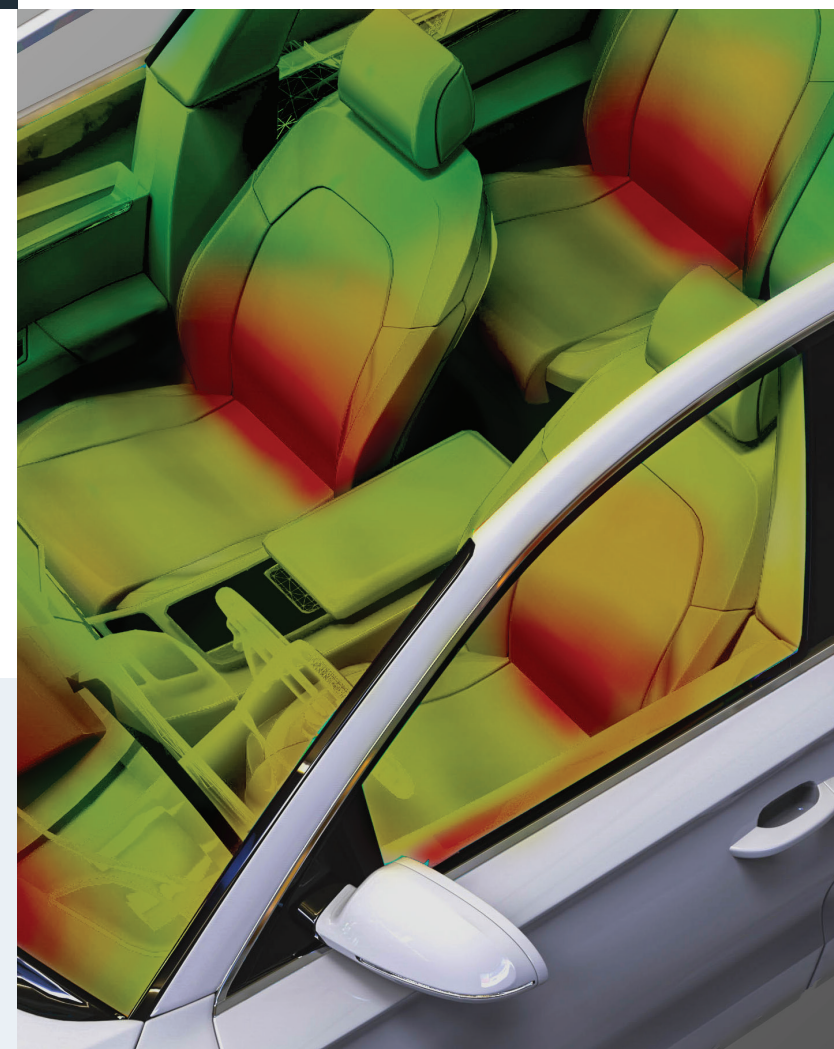
Tuesday, October 3, 5:30 PM | Exhibit Hall

AVL ThermalLab™ - Thermal Development
on testbeds

Christian Mayr, Peter Priesching, AVL LIST GmbH

Hidden Champions: Highly Energy Efficient
Thermal Management Valves

Christian Elz, Saint-Gobain



Thermal Management Systems Symposium

sae.org/tmss

October 3-4, 2023
Plymouth, Michigan



Program Schedule

	Tuesday, October 3		Wednesday, October 4	
	Grand Ballroom	Provincial Ballroom	Grand Ballroom	Provincial Ballroom
9:00-10:00am	Opening Keynote Moderator: Sowmya Jayaraman Keynote Speaker Dr. Rongrong (Roy) Zhang, VP Sanhua Automotive & CTO Sanhua R&D Center		Opening Keynote Moderator: Bing Shuttlewood Keynote Speaker Patrick Kaufman, Global Powertrain Engineering Leader, Accelera by Cummins	
10:00-10:30am	Networking Break in Exhibit Hall		Networking Break in Exhibit Hall	
10:30am-12:30pm	Thermal Systems for Hybrid and Electric Vehicles (TMSS100) Chair: Sowmya Jayaraman, Kumar Srinivasan, Bashar AbdulNour	Thermal Management Strategies (TMSS400) Chair: Wilko Jansen, Kevin Laboe	Thermal Modeling and Simulations (TMSS700) Chair: Wilko Jansen, Sudhi Uppuluri, Alaa El-Sharkawy	Automotive Thermal Systems and Components (TMSS1300) Chair: Ron Semel, Bing Shuttlewood, Jie Zeng
10:30-11:00am	Revolutionizing Battery Cooling - Application of 2-Phase Immersion Cooling in Battery Thermal Management Gero Mimberg, Kautex Textron GmbH & Co. KG	Low Energy Surface Heating for Electric Vehicles and Trucks Sameh Saad, Betterfrost Technologies	The Thermal Ground Planes as a Thermal Management Solution for li-ion batteries in Electrical Vehicle Doriane Hassaine Daoudji, Calogy Solutions	Injection Molded Magnets: History and developments for IMP and Coolant Pump Impellor/Rotors Anthony Carmen, Tengam Engineering Inc.
11:00-11:30am	Dielectric Fluid Weight Reduction with Semi-Immersive Battery Cooling Moussa Nacer-Bey, Valeo Thermal Systems	An Investigation into Electric Drive Unit Cooling System Optimization using an Advanced 1-D Thermal Analysis Tool Davis Trapp, Drive Systems Design	Digital Twin for Thermal Characteristics of Electric Truck Cabin with Efficiency-Enhancing Measures Imre Gellai, AIT Austrian Institute of Technology	A Loop Heat Pipe for Vehicle CPU Cooling: Peak Performance, Partial Flooding and Dry Out Regimes Olivier de Laet, Calyos SA
11:30am-12:00pm	Comparison of Thermal Management Systems Topologies utilizing Thermal Load Metrics on Full Vehicle Level Philip Muhl, Porsche AG	The Role of Oil Bypass Valves in Active Thermal Management Systems of Electric Drive Units Andrew Buckrell, Dana Canada Corporation	Thermal Control systems for Next Vehicle Feneration: from Vehicle Requirements to Thermal System Components' Design using an Advanced Modeling Environment for Simulation Luca Patricelli, Siemens Digital Industries Software	Evaluation of Exhaust Actuator Control in a Cold Temperature Environment Vivek Kumar, Ford Motor Company
12:00-12:30pm	Improving EV Range and Comfort with Smart Heating Glazing Xuejuan Xu, Saint-Gobain Research Compiègne	Thermal Management Systems – Material Optionality in BEV Cooling Systems Jeffrey Helms, Celanese Corp.	A High-Level Look into the Heat Transfer Benefits and Challenges of Battery Immersion Thermal Management Andrew Swantek, Illinois Tool Works Inc	Polymeric Heat Exchangers in Thermal Management of Vehicles Miroslav Raudensky, Brno University of Technology
12:30-2:00pm	Networking Lunch - Atrium Coffee/Dessert - Grand Gallery with Exhibitors		Networking Lunch - Atrium Coffee/Dessert - Grand Gallery with Exhibitors	
2:00-3:00pm	Thermal Systems for Hybrid and Electric Vehicles (TMSS100) Chair: Sowmya Jayaraman, Kumar Srinivasan, Bashar AbdulNour	Case Studies for Heat Pump Efficiencies (TMSS1400) Chair: Jeff Bozeman, Aamir Khawaja, Gursaran Mathur	Thermal Modeling and Simulations (TMSS700) Chair: Wilko Jansen, Sudhi Uppuluri, Alaa El-Sharkawy	Vehicle Cabin Air Quality & Human Factors (TMSS200) Chair: Jeff Bozeman, Jie Zeng
2:00-2:30pm	Optimized Dehumidification Modes for Maximizing Energy Efficiency on Electric Vehicle and Their Control Strategies Rody El-Chammas, Valeo	A Study on Performance Characteristics of heat pump systems with mixed refrigerants in electric vehicles Hoseong Lee, Katech Inc.	A Multidisciplinary Simulation Methodology for Electric Motor Thermal Management Simon Gomboc, AVL-AST d.o.o.	Risk of Infection and Control of Airborne Pathogens in Automobile Cabins Gursaran Mathur, Highly-Marelli North America
2:30-3:00pm	Evaluation of Battery Immersion Cooling Concept through 3D CFD Simulation Christopher Hayes, FEV North America Inc	Efficiency Analysis of Heat Pump Systems for High-Performance Electric Vehicles Thimo Hug, Porsche AG	A Potential-Analysis for Vapor Injection Compressors in Modern EV Thermal Management Systems Christian Rathberger, Magna Engineering Center Steyr GmbH	Development of SAE Standard J3344 for Measurement of Cabin Carbon Dioxide Concentrations Gursaran Mathur, Highly-Marelli North America
3:00-3:30pm	Networking Break in Exhibit Hall		Networking Break in Exhibit Hall	
3:30-5:00pm	Thermal Systems for Hybrid and Electric Vehicles (TMSS100) Chair: Sowmya Jayaraman, Kumar Srinivasan	Thermal Modeling and Simulations (TMSS700) Chair: Wilko Jansen, Sudhi Uppuluri	3:30-4:45pm Panel Discussion - Application of Machine Learning in Thermal Management Moderator - Wilko Jansen, Jaguar & Land Rover Panelists - Sunil Katragadda, Ford Motor Co., Ltd. Kumar Srinivasan, Cadence Design Systems Inc. Jing Sun, Univ. of Michigan-Ann Arbor Sudhi Uppuluri, Siemens Digital Industries Software Thomas von Tschammer, Neural Concept Ltd	
3:30-4:00pm	Thermal Stability of Battery Packs during Cell Thermal Runaway: the Importance of Energy Yields Francesco Colella, Exponent Inc	New 1D and 3D Simulations Cooperation to Assess the Impact of Occupants Thermal Comfort on Vehicle Performance Luca Patricelli, Siemens Corp		
4:00-4:30pm	How Semiconductor Solutions Can Help to Improve Automotive Thermal Management in Electric Vehicles Clark Kinnaird, Texas Instruments	TOfFeeAM: How to Design High Performance Thermal Systems using Mathematics Marco Pietropaoli, TOfFeeAM Ltd		
4:30-5:00pm	Cradle-to-Grave Comparison of Emissions Produced by EV and ICE Powertrains Albert J. Abraham, Kettering University	Analysis of Equivalent Temperature during Steady State of Heating and Cooling in a Vehicle Cabin Using a Mesh-Free Simulation Yoshiichi Ozeki, AGC Inc.		
5:00-6:30pm	Networking Reception Chat with the Experts (5:30-6:00pm)			

SAVE THE DATES!
 See you again next year in
 Plymouth | October 2-3, 2024