

FINAL PROGRAM

# THERMAL MANAGEMENT SYSTEMS AND MATERIALS 2024 CONFERENCE

## IN-PERSON JUNE 13, 2024 SHERATON DETROIT NOVI HOTEL - NOVI, MI USA

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### **Thermal Management Systems and Materials 2024**

7:30 a.m.	.m. Registration, Networking and Continental Breakfast		
8:30 a.m.	Welcome and Opening Remarks Mr. Sean Osborne, Vice President The ITB Group	•	
•	Thermal System Developments	11:25 a	
8:45 a.m.	KEYNOTE PRESENTATION Transformation in Thermal Management Technology CTO		
	The impact of macroeconomic factors on future mobility, its thermal management, and trends at the OEM level.		
9:25 a.m.	Trends and Novel Solutions for Efficient EV Glycol Thermal Management Senior Director of Advanced Fluid Handling Cooper Standard The unique requirements of electrified vehicles enable development of new light-weight thermoplastic glycol fluid handling and control products. This presentation will highlight solutions that address the size, complexity and affordability of glycol thermal management systems as well as highlighting novel integration opportunities which deliver improvements in overall system efficiency.	11:55 a	
9:55 a.m.	5 a.m. A Centralized Secondary Loop Thermal Module for Electric Vehicles Lead Systems Engineer Forvia Hella		
	Centralized thermal management modules for the coolant and refrigerant system have emerged as cost effective EV solutions. In parallel, natural	12:20 p	
	refrigerant such as R290 and R744 show promise for heat pumps. To unlock the true potential of centralized thermal management modules, it is key to understand which functions are best allocated	1:20 p.ı	

Electronics Product Manager Thermal Roechling This presentation explains the development of hybrid metal/plastic cooling plates for a lighter

efficient solution. The design combines formed plastic parts with metal sheets to form fluid channels in a cost-effective manner. Critical processing factors such as adhesion, surface treatment and welding will be described.

Engineering Director **Tengam Engineering** 

**Management Systems** 

**Networking Break** 

architectures.

Functionally integrated thermal modules have been introduced for BEVs with compact integrated designs. They are typically large, vehicle specific and lack degrees of application flexibility. Pump

to the coolant or refrigerant system. A secondary

loop thermal module enabling simplified system

maintenance,

and

decreased

improved vehicle packaging will be described.

Integrated Pump/Valve Solution for Thermal

ίtB

10:25 a.m.

11:00 a.m.

and valve integration solutions that maintain high performance and packaging flexibility, while reducing complexity with minimal system design changes will be highlighted.

#### Surfaces and Heat Exchangers

Interior Thermal Surfaces to Improve EV .m. **Energy Management and Occupant Comfort** Advanced Sales Manager, Surface Activation Forvia Faurecia

> Forvia is investing in industry transformations under its Science Based Targets Initiatives and CO<sub>2</sub> reduction roadmap. From an Interiors perspective, thermal surfaces will revolutionize passenger comfort. Integrated heating solutions enhance occupants' comfort experience with individualized thermal bubbles while optimizing EV energy management.

#### 3D Printing High Performance Heat .m. **Exchangers** President

#### **Fabrisonic**

This presentation explores developments in 3D printing which provide designers with unprecedented flexibility in geometry and material utilization allowing integration of fluid channels and embedding electronics. A significant breakthrough lies in the utilization of new solid-state welding techniques, allowing the integration of multiple metals into intricate and complex parts. Hybrid manufacturing, where traditional methods are synergistically combined with additive techniques for cost-effectiveness will be emphasized.

#### Lunch .m.

n.

Hybrid Cooling Plates for Batteries and Power

#### **Thermal System Materials**

1:50 p.m. Silicone-free Thermal Interface Materials R&D Group Leader, Thermally Conductive Materials Bostik

> Bostik's strategic acquisition of Polytec PT has paved the way for significant advancements in thermal interface and adhesive technology. The focus of this presentation will be on advanced functionality and sustainable silicone-free solutions for EV batteries.

#### 2:15 p.m. Low-Cost Renewable PA6 Copolymer for BEV Coolant Tubing

Process and Product Development Manager **BASF** 

Ultramid Flex offers exceptional chemical resistance for extruded BEV coolant circuit tubing. Compared to traditional long-chain polyamides, it can deliver significant cost savings without compromising performance. Special formulations enable this material to eliminate a bonding layer in multi-layer constructions, reducing production cost and complexity. Advantages and applications will be addressed.

#### 2:40 p.m. Engineering Plastics Developed for Hybrid and EV Thermal Management Systems Application Development Manager Envalior

The performance of proven PPA and PPS thermal system materials will be presented. A new hydrolytically stabilized PA6 material offering superior creep and fatigue performance, compared to GFPP materials, will be introduced. With the advent of immersive cooling as a means of maximizing heat transfer, the presentation will also share findings from long-term chemical exposure tests conducted with select dielectric fluids.

#### 3:05 p.m. Networking Break

3:25 p.m. Powering the Shift: Thermal Management Challenges in the Transition from ICE to BEV New Business Development and OEM Management

#### Teknor Apex Company

This presentation explores critical market trends and legislative shifts driving coolant hose changes. Using insights from leading OEMs, a comparative analysis will be presented, contrasting full plastic solutions with those of thermoset EPDM and Sarlink® thermoplastic vulcanizates (TPV), as well as braided versus multi and mono-layer constructions. Unique challenges and solutions for TPV coolant hose production will also be highlighted.

3:50 p.m. Adhesive Resin Enabling Technology for Multilayer Thermoplastic Coolant Tubes Manager of Business Development Mitsui Chemicals America

Multilayer thermoplastic tubing has emerged as the leading construction for EV thermal management coolant tubing. This presentation will discuss the performance of commercial adhesive resins and TPV compounds that are being supplied to OEMs for production vehicles. Mono and multilayer high flexibility smooth wall coolant tubes will be highlighted.

#### 4:15 p.m. Influence of Relative Thermal Index on Long-Term Mechanical Performance of Engineering Polyamides

## Application Development Engineer - Automotive **EMS-CHEMIE**

High performance polyamides can be tailored to address the unique requirements of challenging applications. This presentation will show how selective evaluation of a thermal profile can improve material solutions to reduce failures and promote part longevity. Relative Thermal Indices (RTI) of polymer compounds will be compared, highlighting how long-term heat exposure influences mechanical performance.

4:40 p.m. Battery Electric Vehicle (BEV) Thermal Management Systems – Material Optionality Automotive Director, Engineered Materials Celanese

> The requirements for BEVs provide opportunities for OEMs and Tier 1s to select materials that have previously not been capable of meeting ICE temperature requirements. This talk examines current OEM practices and material optionality available to the automotive supply base for designing BEV thermal management systems.

#### 5:05 p.m. Closing Remarks

Exhibitors	Arkema	Celanese	Husco	Teknor Apex
	Ascend Performance Materials	Covestro	Kuraray	TI Fluid Systems
	BASF	EMS-Grivory	Schrader Pacific	VEXAGroup
	Bontaz	Evonik	Sun Chemical	Zeon Chemicals

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- Evolving Plug-in and Hybrid Vehicle Thermal Management
- Hydrogen Storage Tanks and Engines for Mobility
- Hydrogen Systems for Transport Briefing
- Global ICE Briefing

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- Advanced Mobility Fuels Summit China 2024
- Critical Technologies for Sustainable Vehicle Production 2025
- Advanced Mobility Fuel Summit 2025
- Automotive Battery Pack Integration 2025
- Thermal Management Systems and Materials 2025

### Contact The ITB Group for more information



37525 Enterprise Court • Farmington Hills, Michigan 48331, U.S.A. Telephone: (1) 248-380-6310 • E-mail: email@itbgroup.com www.itbgroup.com U.S.A. • Europe • Asia