

# THERMAL MANAGEMENT SYSTEMS, COMPONENTS, AND MATERIAL INNOVATIONS 2026

**itB**  
GROUP



**JUNE 11, 2026**

**THE BARONETTE RENAISSANCE  
DETROIT-NOVI HOTEL  
NOVI, MI USA**

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# THERMAL MANAGEMENT SYSTEMS, COMPONENTS, AND MATERIAL INNOVATIONS 2026

7:30 a.m. Registration, Networking and Refreshments

8:30 a.m. Opening Remarks and Thermal Development Insights

Sean Osborne, Vice President  
[The ITB Group](#)

8:50 a.m. Thermal Management Design for Distributed RESS with Swappable Modules

Xiaoling Chen, Senior Researcher  
[General Motors](#)

This presentation discusses thermal management concepts for swappable battery modules in distributed EV RESS architectures. Two approaches were investigated that minimize repeated coolant hose connect/disconnect: a thin-film liquid cooler integrated with the module and an active air-cooling design. For each concept, detailed thermal analysis to quantify cell temperature rise and peak cell temperature under equivalent driving profiles were performed. The results compare the thermal performance and practicality of these two approaches for maintaining safe, uniform temperatures in swappable modules without conventional wet quick-connect interfaces.

## Thermal Materials and Fluids

9:20 a.m. Thick Film Heaters on Steel: A Proven and Cost-effective Technique for Automotive Thermal Management

Dean Buzby, Heraeus Electronics, Global Product Manager, Thick Film  
[Heraeus Electronics](#)

This presentation introduces thick film heaters on stainless steel for automotive applications and provides a practical overview of the technology focused on performance and cost efficiency at scale. A comparison against competitive technologies will illustrate why thick film heaters on steel represent a cost-effective solution.

9:40 a.m. Multi-Layer Tubing Systems for Thermal Management Systems

David Schmitz, Segment Manager Automotive  
[EVONIK](#)

An approach to developing high performance, safe, and reliable thermal tubing systems with advanced material combinations will be presented. Multi material concepts support improved functionality while enabling cost efficient, resource conscious system designs. Recent polyamide tubing developments for automotive thermal management applications will be highlighted.

10:00 a.m. Coffee and Conversation Break

10:40 a.m. Graphite-enhanced Thermal Management: Strategies for low-density, highly processable and sustainable TIMs for EV batteries

Ahmad Abdul Ghani, Application Development Scientist

[Imerys Graphite & Carbon](#) (virtual)

Graphite in thermal interface material formulations reduces filler loading, for lower material density, easier processing and assembly, plus weight savings for battery modules. Graphite additive substitution can boost thermal conductivity while ensuring low electrical conductivity. A novel synthetic graphite will be introduced.

11:00 a.m. Using Additives to Enhance Silicone-Based Thermal Management Materials

Shuyue He, Applications Scientist

[Croda](#)

Effective thermal management materials require optimized formulations to improve heat transfer performance while maintaining processability. A new additive enables better incorporation of thermally conductive fillers into a variety of silicone-based thermal management materials from gap filler pads to thermal greases.

11:20 a.m. Enabling the Transition to TPV in EV Coolant Hoses: Validating Long-Term Performance and Coolant Compatibility

Deck Andrejczak, Global Business Development Manager

[Teknor Apex](#)

Validation data will be presented for EV TPV coolant line applications. The low-leaching benefits of peroxide-cured materials will be highlighted for low electrical conductivity coolant circuits. Additionally, the session will address how TPV-based lines can support lightweighting and circularity objectives.

11:40 a.m. Latest Thermal Management Trends and Solutions for Engine Cooling

Stephen Denny, Application Engineer

[AKRO-PLASTIC](#)

This session will highlight emerging thermal management trends and challenges for next-generation immersion and oil-based cooling systems. Combining direct laser welding with high-performance polymers, unlocks superior durability, chemical resistance, and design flexibility. Commercialized EV applications will be used to illustrate significant reductions in weight, system complexity, and cost.

12:00 p.m. Lunch

## Thermal Systems and Components

**1:15 p.m. Digital Twin of Holistic Thermal Management for a Battery Electric Vehicle**

*Federico Stola, Chief Engineer of Fuel and Thermal Management Systems*  
**Marelli** (virtual)

Balancing thermal system efficiency, cost, and cabin comfort requires advanced control algorithms. Presented is a comprehensive BEV Holistic Thermal Management development process using a co-simulation approach. System and algorithm performance is assessed against key performance indicators to meet vehicle requirements.

**1:45 p.m. Complexity Reduction Through EV Functional Integration**

*Joe Vollmer, Senior Director, Americas*  
**Eberspächer Catem**

Electric vehicles demand advanced thermal management and drive more complex and intelligent coolant loops. An Integrated Thermal Management System (iTMS) offers OEMs a pathway to reduced complexity, and scalable integration for next-generation electric mobility with improved vehicle efficiency.

**2:15 p.m. Fluidtronics: Turning Mechatronics and Fluidics into Integrated Systems**

*Augusto Millán, Sales & Application Manager and Arnaud Hyppias, Development Manager, Mechatronic Systems*  
**Moving Magnet Technologies**

The convergence of mechatronics expertise and advanced fluidic technologies is opening new avenues for system-level innovation. The talk highlights development of next generation solutions illustrated through concrete use cases such as coolant pump, silent HVAC blower, and eFan.

**2:35 p.m. Coffee and Conversation Break**

**3:00 p.m. Mixed Copper–Aluminum Heat Exchangers for Thermal Management of High-Performance Computers**

*Andrei Catuneanu, Team Leader Thermal R&D and Ben Kenney, Advanced Engineering Manager, Thermal*  
**Dana**

A new mixed copper–aluminum heat exchanger technology and its application to automotive

high-performance computer (HPC) cooling will be presented. Performance, integration, and manufacturability considerations for mixed-material heat exchangers will be reviewed.

**3:30 p.m. Hidden Thermal Management Physics - Why Immersion Cooling Systems Behave Differently Than Expected**

*Anthony Khoraych, CEO*  
**Advanced Test and Automation**

This presentation explores gaps between predicted and observed system behavior, focusing on how transient conditions, multi-physics interactions, and system-level sensitivities influence immersion cooling performance. A practical framework helps engineers identify the gaps, plus DV strategies to better reflect real system behavior.

**4:00 p.m. ADAS Thermal Management - Waste Heat Recovery, Storage, and Reuse for ADAS Sensors**

*Nagender Reddy Kasarla, Engineering Manager, Sensors*  
**Molex**

A vehicle Camera/ECU module integrates a thermo-electric converter that recovers heat generated by the Camera/ECU and converts it into electrical energy. This energy is then selectively routed back to power the Camera and/or Low power consuming modules, enhancing overall system efficiency.

**4:30 p.m. High-Heat Transfer Batteries: A Breakthrough for Accelerating EV Adoption**

*Alfred Piggott, Founder & CTO*  
**Applied Thermoelectric Solutions**

The High-Heat Transfer or ParaThermic® battery reengineers EV batteries from the inside out to minimize internal thermal resistance. Modeling and validation demonstrate up to 20× higher heat removal rates and more than threefold improvement in lifespan.

**5:00 p.m. Closing Remarks**



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Thursday, June 11, 2026

The Baronette Renaissance Detroit-Novi Hotel  
27790 Novi Road, Novi, MI 48377

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## ITB Fractional Services

### TECHNOLOGY STRATEGY



- Tech roadmaps
- Product planning
- Investment prioritization

### FEASIBILITY ANALYSIS



- Market needs
- Customer insights
- Tech viability

### COMPETITIVE INTELLIGENCE



- Supply chain trends
- Competitor positioning
- Risk factors

### PARTNERSHIP SCOUTING



- M&A targets
- Licensing
- OEM/supplier collaboration

### REGULATORY INSIGHT



- Legislative drivers
- Incentives
- Compliance impact

### PORTFOLIO OPTIMIZATION



- Value propositions
- Cost/performance
- Sustainability