Final Program
April 27, 2017
The Sheraton Detroit Novi Hotel
Novi, Michigan USA

Exhibitors To-Date:
Arkema ▪ Ascend Performance Materials
DIC / Sun Chemical ▪ DSM Engineering Plastics
Eberspächer Climate Control Systems
Röchling Automotive ▪ Stant
Toray Resin Company

Sponsors:

Source: General Motors
7:15 a.m. Registration and Continental Breakfast

8:20 a.m. Welcome and Introductory Remarks
Sean Osborne, Director
The ITB Group (U.S.A.)

Vehicle Thermal Management: Systems and Regulations

8:30 a.m. Midterm Evaluation of the 2022-2025 LD GHG Standards: Review of Technical Assessment and Role of Off-Cycle Credits
Office of Transportation and Air Quality
US Environmental Protection Agency (U.S.A.)
EPA’s GHG standards contain provisions for recognizing technologies that provide real-world emissions reductions beyond the city and highway test cycles. This presentation will provide an overview of EPA’s compliance assessment and the approach for considering off-cycle credits.

9:00 a.m. Vehicle Thermal Management System for Electric Vehicles
Head of Thermal Management Laboratory
Hutchinson (France)
Hutchinson’s Vehicle Thermal Management System aims to radically change thermal start-up for electric vehicles and associated comfort control systems. A system approach combined with component innovations will be described to achieve 25% improvements in EV range. Key innovations presented will include unique battery thermal management, improved vehicle insulation and thermal energy systems.

9:30 a.m. Promise and Frustration of Off-Cycle Credits
Senior Fellow
The International Council on Clean Transportation (U.S.A.)
Off-cycle credits can increase benefits and reduce costs. Due to a lack of nationwide data on travel behavior and conditions, new off-cycle credit requests require substantive data submissions and take time. One solution is for agencies and manufacturers to cooperate and compile real world data to standardize credits and streamline the approval process.

9:50 a.m. Networking Break

10:40 a.m. Thermal Management Economics
Sean Osborne, Director
The ITB Group (U.S.A.)
This presentation will highlight the value of thermal management technologies to reduce fuel consumption and meet global emissions regulations. Different types of vehicles may have different priorities for technology application. Metrics will be shown for conventional and hybrid as well as plug-in vehicles.

11:00 a.m. Fuel Operated Heaters: Supporting Future Mobility
Vice President, Research & Development
Eberspächer Climate Control Systems (Germany)
Future mobility will be dominated by concepts focused on the reduction of greenhouse gases. One of the most challenging conflicts for plug-in vehicles is to maintain thermal comfort without losing driving range. Fuel and emission efficient solutions to address this challenge will be discussed.

11:30 a.m. Active Grille Shutter Actuator Torque Requirements
Senior Product Development Engineer
Ford Motor Company (U.S.A.)
Most modern vehicles are implementing active grille shutter technology to improve fuel economy and manage thermal heat rejection requirements. This presentation will show a mathematical approach on accurate estimation of the required actuator torque to cycle a grille shutter reliably at high vehicle speeds.

12:00 p.m. Brushless DC/Stepper Motor and Through Shaft Position Sensor Technologies for Ultra-Slim Actuators
Business Development Manager
Moving Magnet Technologies (U.S.A.)
Future automotive thermal management applications increasingly require specifically tailored electromechanical drive solutions to achieve high power output in a compact design space while offering improved noise performance, reliability, and weight. On-Board Diagnostics capability is becoming mandatory for many systems. An innovative range of very flat motor and sensor technologies designed for compact integrated actuator solutions and efficient high volume production will be presented.

12:30 p.m. Lunch

1:50 p.m. Fluid Management Innovations for Efficient Powertrain Thermal Performance
Product Manager, Fluid Components and Systems
Röchling Automotive (Italy)
Röchling Automotive fluid innovations have potential for high impact on thermal efficiency and therefore vehicle emissions. Fluid solutions are designed with high functional integration, low mass and minimal package space for maximum impact. This presentation will review design attributes, design processes and system performance verification.
Material and Processing Innovations

2:20 p.m. Future Trends in High Performance Materials for Thermal Management Modules
Director Business Development
Toray Resin Company (U.S.A.)
Innovations and evolutions of thermal management systems and components are leading to new designs and features. High performance materials are enabling high value solutions tailored to specific needs. This presentation will provide an overview of current materials and trends for thermal management applications and a control solution using Toray Resin high performance material will be highlighted.

2:40 p.m. High Performance Molding with the Technology and Innovation of Multitube® and Multi-Process Plastic Injection Molds
North American Operations Manager
Georges Pernoud North America (U.S.A.)
Plastic injection mold innovations are critical for designing highly integrated, high value solutions for thermal management components and systems. The Georges Pernoud Group’s goals include eliminating the need for multiple tools, secondary operations, and post-assembly. Proprietary innovations include multi-process molds and Multitube® molding. Additionally, a newly developed process injection molds serviceable Liquid Silicone Rubber seals onto a mold’s primary part with a minimal effect to the cycle time. This presentation will highlight examples of highly integrated injection molded products.

3:00 p.m. Latest Welding Techniques for PPS Resins
Business Development Manager, PPS
DIC / Sun Chemical (U.S.A.)
New techniques to weld PPS for advanced coolant applications have been developed and three methods will be presented along with results for various material grades and formulations. These new methods allow the welding of parts with more complicated shapes and offer product, design and packaging engineers more latitude for application development.

3:20 p.m. Networking Break

3:40 p.m. Material Selection for Demanding Thermal Management Applications
Business Development Manager
DSM Engineering Plastics (U.S.A.)
Selecting the proper material for high temperature thermal management applications is critical. Available materials range from high temperature resistant polyamides, PPS and PPAs. This presentation will cover the material properties along with application examples that enable innovative technologies, light weighting and cost reduction.

Heat Management for Improved Efficiency

4:00 p.m. Enhancing Thermal Stability and Performance of Lithium-ion Batteries Using Latent Heat Storage Materials
Senior Scientist
Outlast Technologies (U.S.A.)
A novel thermal management system will be demonstrated which offers a solution to both safety and performance concerns through the use of latent heat storage (LHS) material. The materials are able to absorb and store significant thermal energy while being inherently flame retardant. These benefits substantially increase the overall thermal stability of a battery system. The ability of these LHS- based systems to maintain optimal cycling performance and inhibit thermal runaway will be explored. The benefits for application-specific design configurations will be detailed.

4:30 p.m. Optimization of Instant Exhaust Heat Recovery Combined with Heat Storage Unit for Internal Combustion Engine and Hybrid Electric Vehicles
Senior Product Engineer
Hanon Systems (Czech Republic)
A proposed combined instant exhaust heat recovery system with an energy storage unit will be presented along with system benefits for electrified vehicles. An investigation of energy demands versus actual energy availability and efforts to establish the optimum system size and function to maximize the effects will be shown. Highlighted benefits include coolant loop downsizing, improved battery thermal management and improved EV drive range.

5:00 p.m. Use of Phase Change Materials for Automotive Thermal Management: Focus on Electrical Battery and Low Temperature Loops
Head of Advanced Engineering
Valeo (France)
Novel heat exchangers integrating phase change materials designed to optimize thermal management and the dynamic behaviors of the system will be presented. Specific focus will be placed on a low temperature radiator with high thermal inertia and an electrical battery cooler integrating encapsulated phase change material.

5:30 p.m. Closing Remarks and Cocktail Reception
ITB Consulting Services

Developing / Implementing Strategic Vision
- Creating sustainable value
- Identify appropriate activities - product / customer portfolio optimization
- Globalization strategy
- Technology selection

Technology Feasibility Analysis
- Voice of the customer
- Market trends
- Competitive environment
- Apparent value

Capitalizing on Legislative Trends
- Fuel consumption & GHG developments
- Safety
- Emissions (exhaust and evaporative)

Optimizing Customer Base & Product Portfolios
- Value proposition (what and how products are offered)
- Resource optimization
- Customer portfolio
- Identify threats & opportunities

Leveraging Opportunities in the Competitor and Supply Base Arenas
- Competitor analysis
- Supply base optimization
- Make and buy decisions
- Tier One or Two positioning (tiering strategy)

Creating New Relationships
- M & A - target identification, due diligence & implementation assistance
- Technology licensing
- Product partnering
- Consortiums

Conference Schedule
Plan now to participate in ITB’s upcoming automotive conferences. Opportunities to present, sponsor and/or exhibit are available.

- Plastic Powertrain Parts 2017 - June 1, 2017. Novi, Michigan, U.S.A.
- Smart Automotive Surfaces - October 11 and 12, 2017. Novi, Michigan, U.S.A.

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