ITB

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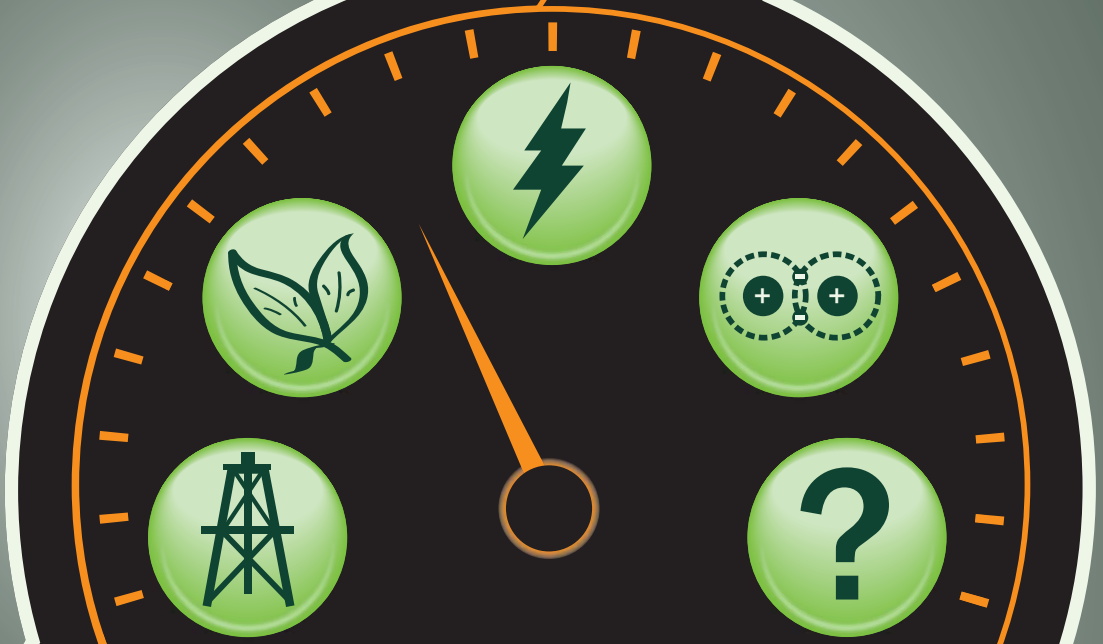
Automotive Energy Storage Systems 2010

March 3 and 4, 2010
Novi, Michigan USA



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Automotive Energy Storage Systems 2010

AGENDA

Please note that conference proceedings are not available

7:30 a.m. - 8:45 a.m. **Registration and Continental Breakfast**

8:45 a.m. **Welcome and Opening Remarks**
Dr. Joel Kopinsky, Managing Director
The ITB Group

Session I: Batteries - Emerging Needs

9:00 a.m. **Lithium Ion Battery Options for Automotive Application**
Intertek (U.S.A.)
This presentation will provide an overview of lithium ion battery chemistries and form factors for automotive application (HEV, PHEV, BEV). Advantages and limitations for the various types will be presented.

9:30 a.m. **Passive Thermal Management of Lithium Ion Batteries using Phase Change Material**
AllCell Technologies (U.S.A.)
Thermal management of lithium ion batteries remains one of the key obstacles to the widespread adoption of PHEV and BEVs. AllCell Technologies has developed a passive thermal management system utilizing phase change material (PCM) that absorbs and evenly distributes the heat in a lithium ion battery pack to create a uniform pack temperature and prevent thermal runaway propagation. The discussion will include an analysis of technical and economic issues.

10:00 a.m. **Genuine Hybrid Automotive System**
Lithium Balance (Denmark)
The biggest disadvantages of electric cars include low range capabilities and long recharging times but if an electric car is powered with a combination of lithium ion battery pack and a methanol fuel cell range extender, these obstacles can be overcome. Advantages in system efficiency, energy consumption, range and refueling time will be presented and supported by test data.

10:30 a.m. **Mid-Morning Break**

Session II: Materials for Alternative Energy Systems

11:00 a.m. **GUR® UHMW-PE for Micro-porous Membranes in Lithium Ion Battery Separator Films**
Ticona Engineering Polymers (U.S.A.)
UHMW-PE resins are used to manufacture micro-porous membranes that separate the electrodes within lithium ion batteries. An overview of the resins and the advantages they provide to withstand the complex environment within the battery as well as the environment the battery experiences during its lifecycle will be discussed.

11:25 a.m. **PPS Compounds for Battery Coolant System Applications**
Chevron Phillips Chemical Company (U.S.A.)
PPS compounds have characteristics such as high temperature, dimensional stability and chemical resistance that make them ideal for use in components of energy storage systems. Special grades have been developed for enhanced property retention after elevated temperature exposure to glycol-based coolants.

11:50 a.m. **How Fluorinated Binders and Separators Enhance the Performances of Lithium Ion Batteries**
Solvay Solexis (U.S.A. and Belgium)
Due to its intrinsic strength, including shelf life, temperature resistance, chemical and electrochemical stability, PVDF is a well recognized binder for both cathode and anode applications. A new generation binder that combines high molecular weight with functionalization of the polymer for further improvement to the battery life is presented. This new binder has a number of benefits including potential higher energy density and power performance.

12:15 p.m. **Lunch**

Wednesday, March 3, 2010

Session III: OEM Perspectives

1:30 p.m. **Reducing Greenhouse Gas Emissions from US Light Duty Vehicles**
General Motors (U.S.A.)
The Obama administration has a stated goal of reducing US greenhouse gas (GHG) emissions by 80% from 1990 levels by 2050. This presentation quantifies the GHG reduction challenge for light duty vehicles and discusses the options for achievement of the 2050 goal. A conclusion is that low-carbon fuels must dominate the mix in 2050 and that no single solution is likely to deliver on the national scale.

2:00 p.m. **Advanced Automotive Battery Development and Application**
Toyota Motor Company (U.S.A.)
The Toyota Hybrid System provides improved fuel economy and driving experience using a blend of internal combustion engine and electric motor power. Toyota continues to improve nickel metal hydride (NiMH) and lithium ion battery technologies for hybrid, plug-in hybrid, and electric-only vehicle applications. Attributes such as safety, durability, energy density and cost must all be improved to provide the best value to the customer.

2:30 p.m. **Batteries for Automotive Propulsion**
Ford Motor Company (U.S.A.)
Battery models are important in all stages of vehicle development from battery design to vehicle systems integration. A lithium ion battery model that identifies resistive factors that lead to performance limitations will be presented. Understanding the factors dominating battery resistance can aid in the development of optimized systems that deliver maximized fuel-economy. Models can also implicate life-limiting mechanisms that ultimately affect warranty costs.

3:00 p.m. **Afternoon Break**

Session IV: Drivers/Barriers to Alternative Energy Systems

3:30 p.m. **The Impact of Plug-in Vehicles on the Electric Utility Grid**
DTE Energy (U.S.A.)
This presentation will discuss what the short-term and long-term impact of plug-in electric vehicles will have on the electric utility grid. Case studies of what electric utilities expect to see on their system and what options there are in mitigating the effect of this new electric load, including the advent of the smart grid will be addressed. While there is a concern over charging infrastructure for electric cars, it should not be seen as an impediment to their immediate adoption.

4:00 p.m. **Update on Scoping California's Long Term (2050) Vehicle Emissions**
California Air Resources Board (U.S.A.)
Identification and implementation of cost-effective and feasible actions to meet ambitious greenhouse gas (GHG) emissions reduction targets for California continue to be among the ARB's highest priorities. The targets were set by the Global Warming Solutions Act of 2006, which calls for rolling back the state's emissions to a 1990 baseline by the year 2020. The State is undertaking landmark initiatives in renewable energy, energy efficiency, high-speed rail, low carbon transportation fuels and vehicles, a cap-and-trade program, and other steps. All these actions are also viewed as enabling steps for the State's 80 in 50 vision; a future in which emissions fall 80% below 1990 levels by 2050. What role efficient, advanced vehicles and fuels can play in achieving the goal for 2050 will be discussed.

4:30 p.m. **Panel Discussion**

5:00 p.m. **Closing Remarks and Cocktail Reception**

11th Annual Automotive Fuel Systems Conference 2010

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7:00 a.m. - 8:15 a.m. **Registration and Continental Breakfast**

8:15 a.m. **Welcome and Opening Remarks**
Dr. Joel Kopinsky, Managing Director
The ITB Group

Session I: Simulation and Testing

8:30 a.m. **Hydrocarbon Emissions: Tests, Concerns, and Status**
Grace Technology (U.S.A.)
Developments in permeation determination for materials and components will be illuminated together with configurations and test methods. The advantages and shortfalls of the different approaches will be addressed. A status review of current regulations and approach/design possibilities that could meet future requirements will be addressed.

9:00 a.m. **Barrier Testing Approach for Automotive Fuel System Connections**
GTR TEC (U.S.A.)
The o-ring seal is an important component to control evaporative emissions and effective testing is crucial in ensuring proper product design. Newly designed test chambers and test data by speciation will be presented to illustrate the testing method efficiency. This testing method has been used in Japan to develop and improve high barrier properties for automotive fuel system connections.

9:30 a.m. **Calculation Method of Adsorption and Desorption Performance of Butane Gas in Carbon Canisters**
MAHLE Filter Systems (Japan)
This presentation will discuss tests and calculations performed on the adsorption, desorption, and diffusion performance for carbon canisters so as to reveal the behavior of the butane gas within the compressed carbon bed. Using the study results, MAHLE aims to design carbon canisters with improved performance.

10:00 a.m. **Understanding Impact Testing Methods in Plastic Automotive Fuel Storage Systems**
Kautex Textron and INERGY Automotive Systems (Canada and U.S.A.)
Since the introduction of plastic automotive fuel tanks in the 1970's, impact testing has been applied as a means to monitor and improve the raw materials, processes, and designs of fuel tanks. This presentation will describe and compare drop testing and crush sled testing. CAE modeling was used to understand the mechanisms of energy transfer to highlight differences and/or similarities between the two test methods. This work was undertaken to support the development of impact test standards by the SAE fuel systems committee.

10:30 a.m. **Mid-Morning Break**

11:00 a.m. **KEYNOTE PRESENTATION**
TI Automotive (U.S.A.)
During the past 18 months, a complete financial restructuring and operational reorganization of TI Automotive has been accomplished. Core competencies and key capabilities for fluid system innovation have been strengthened. Some of the challenges and questions Mr. Kozyra faced will be highlighted together with a summary showing how aligning advanced technology, application engineering and customer collaboration is critical to the future of the industry.

Session II: Fuels and Regulations

11:30 a.m. **Current Status and Potential LEV III Emission Limits**
California Air Resources Board (U.S.A.)
Despite great progress in achieving cleaner air in California, major reductions of criteria pollutant emissions are still required to achieve mandated State and federal ambient air quality standards. To meet this challenge, ARB staff is proposing a new round of more stringent emission standards known as LEV III. From the original LEV I program, introduced in 1990, to the current LEV II program which regulates new vehicles, the California program has been successful by setting cost-effective, technically feasible standards. Proposed LEV III program elements will be discussed.

12:00 p.m. **Driving Towards Sustainable Mobility: The Potential for Advanced Biofuels**
General Motors (U.S.A.)
As the demand for energy continues to grow globally, finding sustainable sources of energy is critical. Advanced biofuels can offer a renewable source of domestically produced fuels with reduced greenhouse gas emissions. This presentation will look at the current state of development of a variety of advanced biofuel technologies and some of the issues surrounding their development.

Thursday, March 4, 2010

12:30 p.m. **Lunch**

Session III: Fuel Tank Innovations

1:30 p.m. **Occurrence and Control of Free Radicals in Fuel Systems**
LyondellBasell Industries (Germany)
Current fuel systems are exposed to various challenges: biofuels with variable and different properties, dirty fuels in emerging markets and increasingly strict emission limits. Free radicals impact plastic fuel tank material performance. A product family, Lupolen 4261A+, has been developed for controlling free radicals.

2:00 p.m. **TSBM : The Answer for Future LEV III Regulations**
INERGY Automotive Systems (Belgium)
Future LEV III regulations are challenging fuel systems regarding emission performance. Twin sheet technologies will play a major role in the technical solutions proposed by the different Tier I suppliers and TSBM's versatility and ability to address LEV III will be addressed.

2:30 p.m. **TI Tank ANalyzer (TITAN) Process – An Application Roadmap**
TI Automotive (Germany)
An advanced portfolio of fuel tank technologies and an approach for analyzing respective applications have been developed. The portfolio ranges from traditional blow molded tanks to systems for integrating different system components during the tank manufacturing process: Ship In a Bottle (SIB) and Tank Advanced Process Technology (TAPT). An update on these technologies will be provided including how plastic tanks may offer further emissions improvements and withstand internal pressures.

3:00 p.m. **Durability Performance of Steel Fuel Tanks in Bio-diesel Fuels**
ThyssenKrupp Steel; Martinrea International and Strategic Alliance for Steel Fuel Tanks (U.S.A.)
A study of the corrosion durability of 10 different steels in bio-diesel fuel blends has been completed. Test results will be highlighted and the corrosion durability of the 10 steels in both ethanol-containing fuels and bio-diesel blends will be summarized together with on-going work.

3:30 p.m. **Afternoon Break**

Session IV: Component Developments

4:00 p.m. **Plastic Automotive Filler Pipes**
Rhodia Polyamide (France)
The recent trends of reducing evaporative emissions and weight reduction, associated with the safety concerns related to electrostatic discharge hazards during refueling, make a monolayer nylon construction the best technical and economical alternative solution to an HDPE based filler pipe. Special material grades that combine the easy processability of nylons, with excellent barrier performance to all fuels, including biofuels will be introduced.

4:30 p.m. **Next Generation Carbon Canister (NGCC®), a Solution for Hydrocarbon Vapor Storage of Gasoline Hybrid Vehicle Application**
Kautex Textron (Germany)
Kautex has validated a heated carbon canister in cooperation with MAST Automotive for PZEV applications. This technology can purge the activated carbon at the low purge volumes found in downsized engines for hybrid vehicle applications. The lecture will review historic data, ongoing development status and the achieved emissions test results. A possible application of the NGCC® for heated and non-heated versions will be addressed.

5:00 p.m. **Integrated Functions within Quick Connectors**
RayConnect (France)
Function integration within quick connectors will be discussed. Advantages in terms of space saving, economic gains, reduction of system complexity, safe management of aggressive or dangerous fluids and minimization of overall vehicle emissions will be highlighted.

5:30 p.m. **Closing Remarks and Cocktail Reception**

Automotive Energy Storage Systems and Fuel Systems 2010

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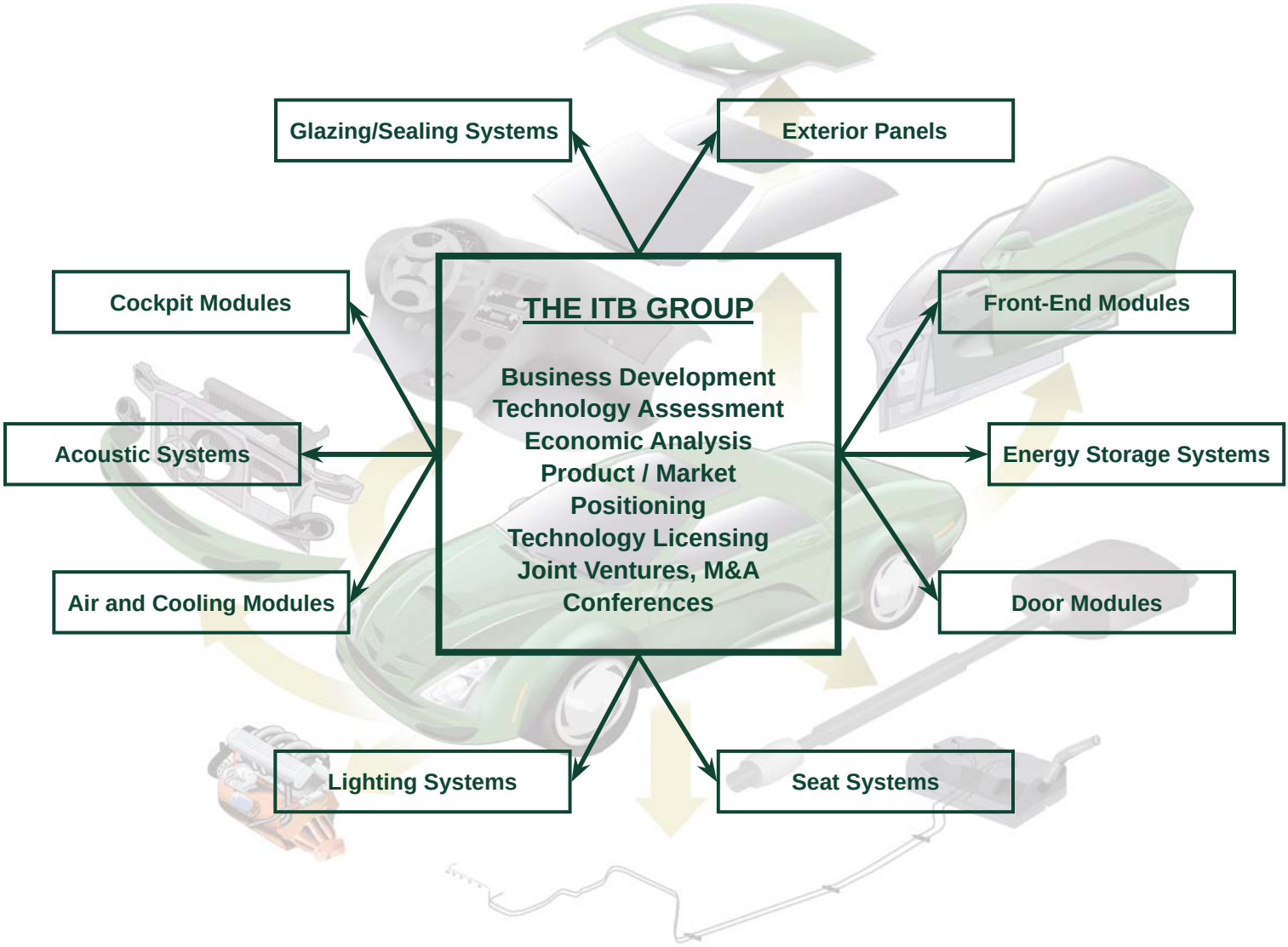

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