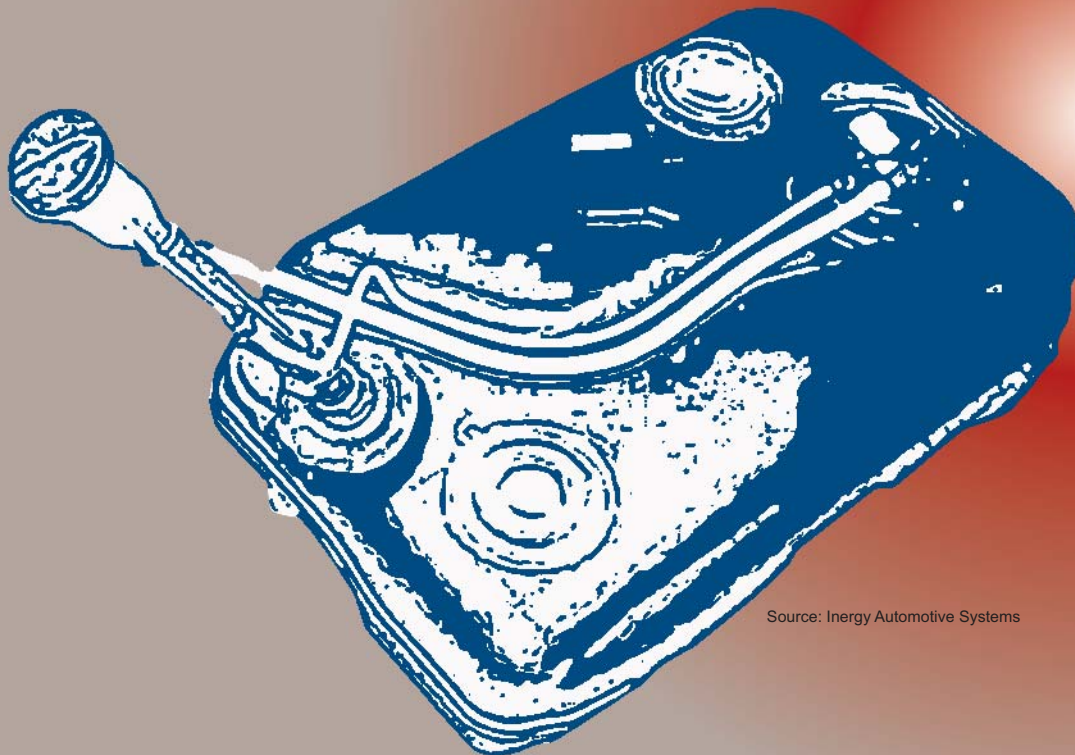


# Automotive Fuel Systems 2005

## March 4, 2005

The Ritz Carlton Hotel • Dearborn, Michigan USA



Source: Inergy Automotive Systems

## Final Program

### Sponsors



# Automotive Fuel Systems 2005



The only one of its kind, this sixth fuel systems conference will bring fuel system industry participants together from all over the world with a common purpose of finding out the latest developments in fuel systems. This conference has been used as a platform by suppliers to announce new product introductions. The one day format of the conference also serves as an excellent networking opportunity.

## AGENDA

Please note that conference proceedings will not be available

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

8:15 a.m. **Opening Remarks**  
*Dr. Joel Kopinsky, Principal, The ITB Group (U.S.A.)*



### SESSION 1: TOMORROW'S FUEL SYSTEMS

8:30 a.m. **Well-to-Wheels Analysis of Advanced Fuel/Vehicle Technologies**  
*General Motors (U.S.A.)*  
Decisions on future vehicle propulsion options should consider energy and emissions for fuel production as well as usage on the vehicle. Results from a GM-sponsored well-to-wheels study comparing hybrids, diesels, ethanol fuel, and hydrogen fuel cells will be discussed.

9:00 a.m. **California's Zero Emission Vehicle Regulations – An Update**  
*California Air Resources Board (U.S.A.)*  
The Zero Emission Vehicle (ZEV) Regulations, initially passed in 1990 and most recently amended in 2003, are now being implemented. This update will provide a basic tutorial on the structure of the ZEV regulation and the vehicle technologies being used to implement it. An overview of what makes a PZEV a PZEV, the estimated costs and current and projected sales volumes will be provided. Additionally, this presentation will look to the future: fuel cell vehicles and California's Hydrogen Highway Initiative.

9:30 a.m. **KEYNOTE ADDRESS**

**Perspectives of the Fuel System Market and Challenges of Emission Regulations**  
*Inergy Automotive Systems (France)*

10:00 a.m. **Mid-Morning Break**



### SESSION 2: FUEL VAPOR MANAGEMENT

10:30 a.m. **Super Efficient Carbon Canister - A PZEV Canister Utilizing Purge Heater Technology**  
*Mast Automotive (U.K.)*  
Near zero emissions for LEV II and PZEV carbon canister applications have now been achieved despite very low purge air volumes. This further allows for the use of the technology on future GDI and hybrid engines.

11:00 a.m. **Developing Cost-Effective Carbon Canisters to Meet the Requirements of Different Global Regions**  
*MAHLE Tennex (U.S.A.)*  
This presentation provides a brief summary of the approach MAHLE undertakes to achieve global synergy in order to deal with the common challenges facing the R&D community. Carbon canisters are region specific since the regional legislation, such as PZEV in the USA, requires different products and system solutions. Therefore, synergies are important to achieve as cars are exported to separate regions.

11:30 a.m. **Novel Zeolitic Air Intake System Hydrocarbon Trap**  
*Engelhard (U.S.A.)*  
*Ford Motor Company (U.S.A.)*  
A significant portion of a vehicles' evaporative emissions are emitted from the air intake system. A hydrocarbon trap has been developed to control these emissions. The technology utilizes a proprietary zeolite coating designed with the right pore structure for effectively adsorbing fuel-derived hydrocarbons.

12:00 p.m. **Lunch**



### SESSION 3: FUEL LINE SYSTEMS

1:00 p.m. **Improved Temperature-Resistant Nylon 12 Grades for Diesel Vehicles**  
*Degussa (Germany, U.S.A.)*

Two specialty nylon 12 grades have been developed for use in fuel return lines and fuel lines located close to engines in diesel vehicles featuring new injection systems. These are superior to previous grades in resisting aging at temperatures up to 125 °C. Compared with systems based on vulcanized elastomers, the new lines are more economical. The development is completed by the addition of improved heat resistant, glassfiber-reinforced molding compounds for quick connectors.

in the marketplace. An overview of patents, copyrights, trademarks and trade secrets as well as the use of confidentiality agreements will provide the backdrop for the development of a strategy for managing a company's intellectual property portfolio while being responsive to the requirements of the automotive customer.



## SESSION 4: PZEV FUEL TANKS

### 1:30 p.m. Innovative Fuel Line Designs

*Arkema (U.S.A.)*

Fuel lines need to meet increasingly stringent technical, environmental and economical constraints. Innovative conductive materials and low emission fuel line designs will be presented. These new developments will bring value to the OEMs and help solve some of the current industry challenges.

### 2:00 p.m. Low Permeation Thermoplastic Fuel Line with Improved Heat Resistance

*ITT Industries - Fluid Handling Systems (U.S.A.)*

A new three layered tube with improved heat resistance, good chemical resistance and low permeation has been developed using ethylene tetrafluoroethylene (ETFE), a melt process-able fluoropolymer, as a barrier material. A modified ETFE is used as the adhesive intermediate layer. Material choices for the outer layer tend to follow the traditional nylon 12 resins for its proven chemical resistance and mechanical performance. In this case, a new grade of Nylon 12 was selected to meet both the traditional needs and increased temperature performance.

### 2:30 p.m. Improved Conductive O-Rings

*Precix (U.S.A.)*

Electrostatic dissipation is a growing trend for automotive fuel system connections. The FKM elastomeric o-ring seal is a critical component of the conductive pathway. Providing conductivity of the seal through the incorporation of carbon nanotubes vastly improves properties over existing conductive carbon black technology. The results are a softer O-ring seal, with improved processing characteristics, enhanced permeation resistance and stable electrical properties.

### 3:00 p.m. Afternoon Break/Dessert

### 3:30 p.m. SPECIAL PRESENTATION

#### Intellectual Property and How to Protect it in a Supply Relationship

*Attorney, Borda, Lorenz & Geggie (U.S.A.)*

Protection of a company's leading edge technology is key to maintaining a competitive advantage. This presentation will discuss several methods that can be used to protect technology

### 3:50 p.m. Improved Fuel Tank Design Techniques: Plastic Fuel Tank Pinch-Off lines; PZEV-Proof with HDPE and EVOH

*Basell Polyolefins (Germany)*

Multilayer plastic fuel tanks have a variety of different pinch-off designs. A finite element-based technique has been developed to simulate permeation through the pinch-off area. Some of the current pinch-off designs have been found to offer permeation rates below PZEV targets. In parameter variations, the method was used to separately evaluate the influence of various geometrical details as found in real pinch-off lines. The key parameters and their impact on emissions have been identified. Design rules for PZEV-compliant pinch-offs can be derived for the standard materials HDPE and EVOH.

### 4:20 p.m. PZEV Plastic Fuel System Introduced in the Market

*Kautex Textron (Germany)*

Model year 2005 PZEV evaporative emission requirements are in place and compliant vehicles are being supplied to the market. Kautex Textron has developed a plastic fuel system which is now in volume production and introduced in the market by a German car manufacturer. Consequent application of lowest emission design requirements including internal assembled venting systems now enable plastic fuel systems to comply with customer and regulation needs.

### 4:50 p.m. Breakthrough PZEV Plastic Fuel System Technology

*Inergy Automotive Systems (Belgium)*

A proven PZEV plastic fuel tank system (SOP 2006), with emissions lower than 20 mg during diurnal testing will be introduced. The industrial process was simplified by relying on upgrading current LEV II architectures to PZEV requirements.

### 5:20 p.m. Cocktail Reception

# Consulting Expertise



## Exhibitors:

American Iron and Steel Institute/Strategic  
Alliance for Steel Fuel Tanks  
Alfmeier  
Arkema  
Bekaert Fibre Technologies  
Daikin America  
Dana Corporation  
DuPont Automotive  
Dyneon  
Empire Electronics  
EMS-GRIVORY  
EVAL Company of America

Fraenkische USA  
Hydro Aluminum Hycot  
Hyperion Catalysis  
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ITT Industries - Fluid Handling Systems  
Mercury Plastics  
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