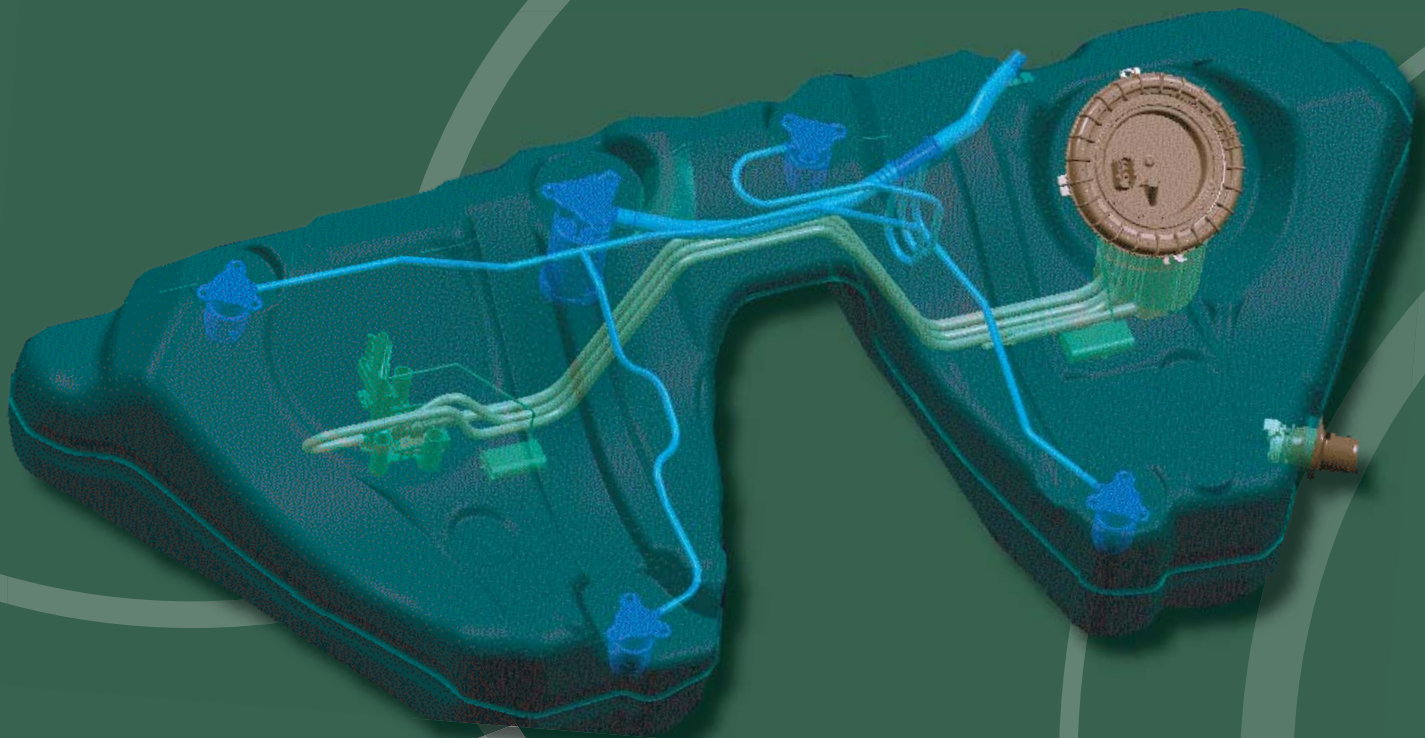


Automotive Fuel Systems

2007

The
ITB
Group, Ltd.



Source: Kautex Textron

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Final Program

March 2, 2007

Ford Motor Company Conference and Event Center • Dearborn, Michigan U.S.A.

ITB's Eight Annual Fuel Systems Forum

Welcome to ITB's eighth automotive fuel systems forum. The objectives for each of our annual events have remained the same since our first forum in 2000:

- Presentations that highlight technological developments and unmet needs
- Exhibits displaying fuel system component and test equipment innovations
- Networking opportunities with industry colleagues from around the globe

Today's forum is not designed to be an academic-type conference. There are other meetings where subjects such as Fick's law, as it pertains to the diffusion of fuel components through polymeric structures, can be debated ad nauseam.

It's incredibly tough times for the OEMs and their suppliers. US domestic OEMs continue to undergo a dramatic repositioning within the local market. Predictions show that Ford may slip to fourth in the US market this year. Suppliers continue to vie for business at dangerously low prices. At the same time, raw material costs have increased as supplies have tightened and unexpected political factors have come into play.

Future vehicles will inevitably have improved fuel economy. Different approaches to using combinations of electricity and fuel will proliferate in response to this need. Fuel compositions will change as higher oil prices drive the need for alternative sources of fuel. Vehicle emissions will be drastically reduced as the world wakes up to the potential horrors of global warming. Just this past February, German Chancellor Angela Merkel told the European Parliament in a discussion concerned with carbon dioxide emission reductions: "Germany is going to have to accept compromises which won't be easy for us. Each member state must put in its own contribution. It would be an error if we pursued only our own interests, and we're not going to make that error."

At the heart of these challenges lies the need for investing in innovation by the industry despite dismal financial results and headcount reductions. Targeted, customer oriented innovation, will help suppliers realize a long term sustainable competitive advantage. Competing with a lean manufacturing strategy together with a misdirected or nonexistent new product development plan, will never work in the long term.

Today's forum offers fuel system industry participants the opportunity to flaunt their new developments. Hopefully, this will kindle creative ideas that in turn, will lead to improved fuel system performance.

Dr. Joel Kopinsky
Managing Director
The ITB Group



AGENDA

Please note that conference proceedings are not available

7:00 a.m. -

8:15 a.m. **Registration and Continental Breakfast**

8:15 a.m. **OPENING REMARKS**

*Dr. Joel Kopinsky, Managing Director
The ITB Group (U.S.A.)*

Fuel Tank Developments

8:30 a.m. **LUPOLEN 4261A IM – A Breakthrough for Injection Molded Auxiliary Tank Parts**

Basell Polyolefins (U.S.A.)

Specialty grades of HDPE are used extensively in blow molded multilayer fuel tank shells. Injection molded fuel tank components attached to the tank shell must meet stringent performance standards. Basell's new injection molding grade offers improved cold temperature impact, outstanding chemical resistance and superior injection molding capability.

9:00 a.m. **Next Generation Fuel System**

Kautex Textron (Germany)

Next Generation Fuel System is a new process that provides the ability to produce a fuel tank meeting future customer demands. It provides design freedom for new solutions, an increase in usable volume and an inexpensive solution for plastic PZEV fuel systems. The advantage is achieved by using the general infrastructure within the present production plant. By applying lean production principles, flexibility in production is increased. All these benefits will lead to lower lifetime costs, reliable products and a greater flexibility during development.

9:30 a.m. **High Performance Adhesive Resin for Coex PFT with Superior Long Term Resistance to Bio-fuels**

JPE (Japan)

High performance adhesive resin and HDPE specifically for EVOH coex plastic fuel tanks have been developed. The adhesive resin shows a superior long-term resistance to both biodiesel at high temperature and ethanol-blended fuels.

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

Alternative Fuel Technology Developments

10:30 a.m. **GM Perspective on Ethanol**

General Motors (U.S.A.)

Recent price increases for petroleum based transportation fuels have led to a search for alternatives. Ethanol is an alternative fuel that is currently widely available. In the current environment, the economics are favorable and it is experiencing rapid growth. General Motors views ethanol as both an opportunity and a challenge. The challenge is due to ethanol's behavior when blended at low concentrations into gasoline. At low concentrations ethanol increases the permeation of both ethanol and gasoline through polymeric materials with important consequences for meeting emissions regulations.

11:00 a.m. **Integrated AdBlue-SCR System for Passenger Cars**

Inergy Automotive Systems (Belgium)

AdBlue-SCR is the technology chosen by passenger car OEMs to bring diesel powered vehicles in conformity with EPA Tier Two Bin 5. Inergy has developed an integrated fluid system compatible with the latest EPA draft on in-use compliance. Challenges such as a longest possible refill interval, refill convenience, heating system performance and a low level indication are in the spotlights of the system development.

11:30 a.m. **Challenges and Solutions for Developing a Modern Diesel Fuel Filtration System**

MANN+HUMMEL (U.S.A.)

Diesel fuel filtration systems are described that include either a plastic or aluminum housing, a water sensor, a water reservoir with drain spigot, a pressure differential sensor, temperature management (through heater or fuel recirculation) and a multilayer two-stage filter element. This element separates via hydrophobic synthetic media. Particulate separation occurs through fine cellulose media. The system also allows for the removal of air bubbles.

12:00 p.m. **Vacuum Assist Injector Fuel Recovery Harness**

Cooper Standard Automotive (U.S.A.)

Improvements in modern diesel fuel delivery systems have played a role in virtually eliminating the customer perceived gap between gasoline and diesel motors regarding noise, vibration, smoke, and hard starting. Cooper Standard Automotive's vacuum assist diesel injector fuel recovery harness with integrated venturi pump is currently used in various diesel fuel and emissions systems.

12:30 p.m. Lunch

Vapor Control and Fuel Filler Developments

1:30 p.m. Hydrocarbon Sensing Approach to Vapor Management

Delphi (Poland)

The performance of evaporative control systems becomes critical for new engine families, direct injection gasoline, hybrids and turbo-charged engines. Such engines require excellent control of fuel-air mixture ratios especially at lean and limited purge conditions. An innovative approach towards vapor management is presented that is based on a hydrocarbon sensing technique.

2:00 p.m. Flow Features of an Automotive Gasoline Refueling Nozzle: Experimental and Computational Study

Mark IV Automotive (U.S.A.)

Experimental and computational studies have been performed to understand the flow features of a gasoline refueling nozzle. Flow visualization techniques such as high-speed camera photography and a strobe light were used to qualitatively study liquid flow pattern. CFD modeling includes using a two-phase model and two different turbulent models to simulate the nozzle spray pattern.

2:30 p.m. Multi-function Fuel Filler Closure for High Volume Applications

Martinrea International (U.S.A.)

Improvements in design techniques and materials have made it practical for capless fuel filler systems to replace conventional fuel caps in high volume production applications without compromising safety or emissions compliance. The design of a capless refueling system combining intuitive customer operation, compact size, low cost and a robust means of preventing misfueling will be presented.

3:00 p.m. Emission Performance of the Integrated Purgeheater Carbon Canister (IPCC)

Kautex Textron (Germany)

MAST Automotive (U.K.)

Hydrocarbon emission reduction is still a challenge for all vehicle classes especially PZEV and LEV II vehicle categories that require large carbon canisters to prevent refueling and bleed emissions. An additional burden comes with the introduction of alcohol containing fuels up to E85. Kautex has set up testing and validation equipment to benchmark and to develop an improved carbon canister.

3:30 p.m. Afternoon Break/Dessert

3:45 p.m.

Future ARB Regulations for Off Highway Recreational Vehicles

California Air Resources Board (U.S.A.)

The California Air Resources Board is currently developing a regulation that will lower the evaporative standards for Off Highway Recreational Vehicles. Preliminary results show that running loss may be a concern and that a combination of lower permeation materials, carbon canisters and advanced fuel management systems can eliminate a majority of uncontrolled evaporative emissions.

Fuel Lines and Emissions Testing

4:15 p.m. High Performance Polyamides and Sustainable Development

Arkema (France)

PA11 features superior aging resistance to biodiesel at high temperature. This renewable source, bioplastic, is derived from castor seeds. The use of renewable source fuels such as biodiesel and flexfuel, combined with the use of PA11, can significantly reduce greenhouse gas emissions. Multilayer fuel line technologies for biofuel specifications have been developed.

4:45 p.m. Production Leak Testing of Automotive Fuel Systems and Components

Future Technologies (U.S.A.)

This presentation will 1) review historical test methods vs component vs leak rate, 2) review emerging technologies that allow for the on-chassis testing of assembled fuel systems, 3) highlight test machine options that make high-volume production testing possible, and 4) provide input on design-for-test decisions that can have a major impact on the ability to efficiently and economically test components.

5:15 p.m. Resin Combinations for Efficient and Cost-Effective Fuel Line Systems

Degussa High Performance Polymers (U.S.A.)

Changing emissions regulations, upcoming new fuel compositions, higher temperature requirements and ongoing cost pressure are challenges for new materials and systems to meet future requirements for fuel lines. Degussa offers a tool box of multilayer tube resins developed with its cooperating partner Daikin. Systems offered include EVOH and ETFE barrier layers and high temperature solutions using PA612 and conductive ETFE.

5:45 p.m. Closing Remarks and Cocktail Reception

EXHIBITORS

Alfmeier

Arkema

Basell Polyolefins

Bulk Molding Compounds

Cooper Standard Automotive

Degussa High Performance Polymers

Eaton

EMS-GRIVORY America

EVAL Company of America

Exacto Spring Company

Expert Corporation

Foamex Technical Products

GTR TEC

Hyperion Catalysis

Inergy Automotive Systems

MAHLE Test Systems & Flex Fuels

Norma Products

RayConnect

RTP Company

Strategic Alliance for Steel Fuel Tanks

Solvay Advanced Polymers

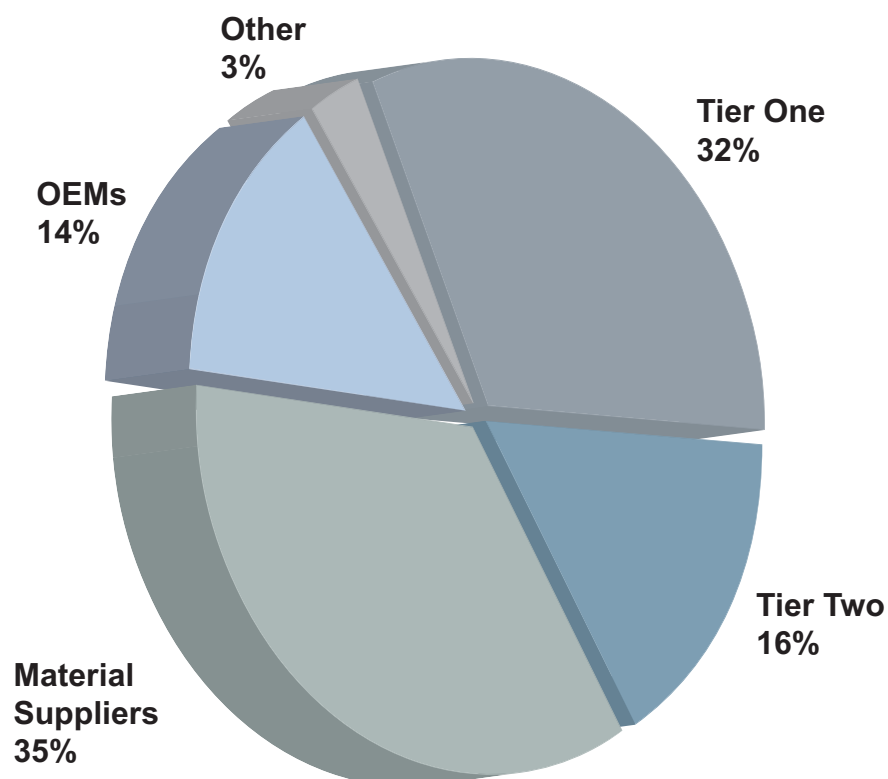
Solvay Solexis

Stant Manufacturing

Surface Activation Technologies

Ticona Engineering Polymers

Estimated 2007 Attendance Breakdown



Consulting Expertise



39555 Orchard Hill Place, Suite 225
Novi, Michigan, U.S.A. 48375
Telephone: (1) 248-380-6310
Email: email@itbgroup.com
www.itbgroup.com
U.S.A. • Europe • Japan