

AUTOMOTIVE FUEL SYSTEMS

FINAL PROGRAM

The
ITB
Group, Ltd.

FEBRUARY 28 • RITZ-CARLTON • DEARBORN, MICHIGAN

2003



SPONSORS



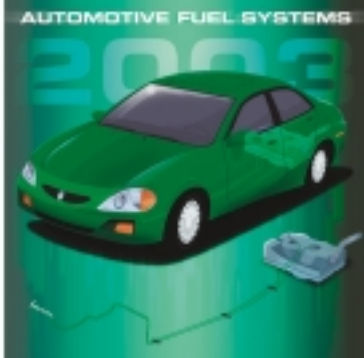
AGENDA

The only one of its kind, this fourth fuel systems' conference will bring executives together from all over the world with a common purpose – to improve fuel system performance and efficiency. Program sessions will be conducted by the world's leading experts. You'll learn from these practicing professionals in every key area of fuel systems including:

- Future Design Trends
- Issues with Electrostatic Discharge
- Materials
- Low Emission Systems

To sum up, the program will be a well-balanced mix of technical, and business issues.

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.)

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

SESSION 1: LOOKING TO THE FUTURE

8:30 a.m. **Virtual Prototyping of Fuel Systems: Achievements and Trends**

Inergy Automotive Systems (Belgium)

Virtual prototyping of fuel systems is a key to support OEMs in the reduction of the development time of a car. State of the art in simulation includes processes, product and system simulation. Current best practices and future trends will be covered.

9:00 a.m. **Development of a CFD Based Design Program for Automotive Filler Pipes and Carbon Canisters**

Mark IV Automotive (U.S.A.)

Studies have been initiated to understand the flow features through a filler pipe and the hydrocarbon adsorption in a carbon canister using Computational Fluid Dynamics (CFD). Through these studies, important design criteria affecting fluid flow and adsorption are to be developed. The commercial CFD package, FLUENT has been used for all the analyses.

9:30 a.m. **Hydrogen on Demand™ in the Peugeot Citroën H₂O**

Millennium Cell (U.S.A.)

Millennium Cell has developed in cooperation with PSA, a fuel system based on its proprietary Hydrogen on Demand™ technology to provide hydrogen for its H₂O concept vehicle. This presentation will describe the fuel system and the installation in the vehicle.

SESSION 2: ELECTROSTATIC DISCHARGE (ESD) – SOCIETAL REALITIES

10:30 a.m. **Electrostatic Ignition at Gas Stations – Facts and Myths**

Ford Motor Company (U.S.A.)

Recently, several urban legends have propagated via e-mail in response to reports of fires that started while people were refueling their automobiles or refilling jerry cans. While many of the incidents may be true some of the explanations are, at the very least, not accurate. Furthermore, some of the advice given to avoid these incidents is inaccurate. This presentation will attempt to state the facts and dispel the myths about these occurrences.

11:00 a.m. **Design of Polymeric Fuel Systems to Minimize Electrostatic Discharge**

Delphi Energy & Chassis Systems (U.S.A.)

The past two decades have seen the increased use of polymeric components in automotive fuel systems. It is now often recommended that any materials that come in contact with flowing fuel have a minimum of electrical conductivity and that the system be designed to provide sufficiently conductive paths for all electrostatic charge to be limited to nondestructive levels. The rationale behind these recommendations and the way in which they can be implemented will be discussed.

11:30 a.m. Electrostatic Discharge – Expert Panel

Degussa (U.S.A)

Martinrea International (U.S.A)

ITT Industries (U.S.A.)

General Motors (U.S.A)

12:15 p.m. Lunch

SESSION 3: MATERIALS FOR FUEL SYSTEMS

1:00 p.m. Durable Steel Systems for Fuel Tanks

AISI/SASFT (U.S.A.)

The Magni Group (U.S.A.)

New stringent emission standards, taking effect in 2003, also require that fuel systems remain durable and fully functional for up to 15 years and 150,000 miles. To address this question, the Strategic Alliance for Steel Fuel Tanks (SASFT), an international group of steel producers and manufacturing companies, embarked on a major corrosion test study of various steel systems. The corrosion results are briefly reviewed in this presentation.

1:30 p.m. New Multilayer Structure for Plastic Fuel Tanks

TI Automotive (Germany)

Atofina (France)

An innovative multi-layer structure for plastic fuel tanks has been developed that meets the stringent requirements set by CARB for LEV II and PZEV vehicles. The new construction is designed for production on existing blow molding industrial lines and offers outstanding barrier performance to all types of fuels, in combination with the required thermomechanical and impact properties.

2:00 p.m. Development of a New Low Temperature Fluoroelastomer for Automotive Sealing Applications

Dyneon (U.S.A.)

Fluoroelastomers are known in the automotive industry for their superior heat and chemical resistance. A new fluoroelastomer has been developed that maintains these desirable attributes while delivering unique low temperature sealing capabilities. This low temperature fluoroelastomer exhibits a TR10 value equal to -40°C while also offering broad fuel and oil resistance.

2:30 p.m. Evaluation of the Mechanical Properties of Selected Conductive Polymers

Hyperion Catalysis (U.S.A.)

Due to the specification of conductive polymers for use in automotive fuel systems, new material compounds have been developed. The purpose of this study is to test the mechanical properties of several typical conductive grades of the most popular polymers used in today's fuel system applications: nylon 12, and acetal. Materials have been developed using several different conductive additives. Data will be presented as tested by Oak Ridge National Laboratory.

3:00 p.m. Mid-afternoon Break

SESSION 4: LOW EMISSION FUEL SYSTEM TECHNOLOGIES

3:30 p.m. Hybrid Fuel System Quick Connector

ITT Industries (U.S.A.)

A new steel/plastic hybrid fuel system quick connector that provides increased performance at reduced cost has been developed. This new design provides the error proof assembly features of the Posi-Lock connector along with the hydrocarbon permeation resistance of a steel housing. A comparison of the insertion force profile of the hybrid versus standard steel connectors will be reviewed together with a discussion of several new innovative features.

4:00 p.m. Low Permeation Technologies for Plastic Fuel Tanks

FTS Co., Ltd. (Japan)

A plastic fuel tank has been developed that is much lower than conventional plastic fuel tanks in permeability. This low-permeation plastic fuel tank may easily conform to the Tier 2 and LEV II regulations. The presentation outlines the low permeation technologies for the plastic fuel tank.

4:30 p.m. PZEV Plastic Fuel Tank Features and Performance

Kautex Textron (Canada, Germany)

PZEV plastic fuel tank applications are in the development process for 2004/2005 model year vehicles. Extremely low emission targets from OEM customers have to be validated. A prediction method to estimate the tank shell emissions including pinch-off and other welding connections taken from real tank design data, combined with CARB SHED temperature measurement conditions, will be demonstrated.

5:00 p.m. Cocktail Hour

ABOUT YOUR ORGANIZER

Established in July 1992 by Dr. Joel Kopinsky and Ms. Mitra O'Malley, The ITB Group serves suppliers and original equipment manufacturers (OEMs) in the global automotive market. By combining strong technical and business skills, The ITB Group helps senior managers develop and implement strategies that provide sustainable long-term competitive advantages.

The ITB Group's core competencies are:

International Presence:

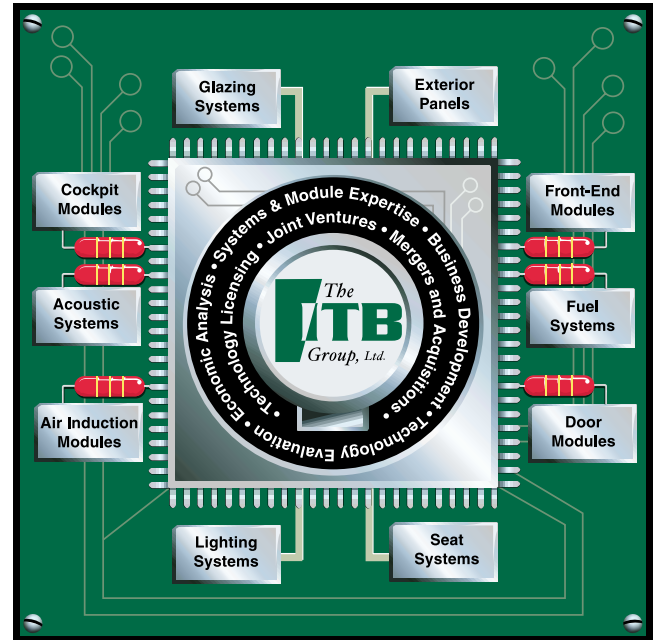
The firm's presence in North America, Europe and the Far East provides a solid basis for automotive consulting assignments. In each of these regions ITB has established a significant network of clients and industry contacts.

Technical Expertise:

Advanced engineering degrees and over 30 years of combined industry experience provide the firm's consultants with the relevant backgrounds to understand difficult technical issues that face their clients. Such issues may be related to product design, materials, primary and secondary processes or vehicle assembly.

Business Recognition:

Widespread marketplace recognition and business experience enable the firm's consultants to interact with key automotive participants around the world. Participants include senior level managers, automotive research and design engineers, sales and marketing personnel and government officials.



LIST OF EXHIBITORS

A. Raymond
AISI/SASFT
Basell Polyolefins
BP Solvay Polyethylene
Dyneon
DuPont Automotive
EMS-Grivory
EVAL Company of America

Hydro Aluminum Hycot
Hyperion Catalysis
ITT Industries
LNP Engineering Plastics
Norma Products
Martinrea International
RTP Company
Ticona



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