



March 5, 2004
The Ritz-Carlton Hotel
Dearborn, Michigan USA

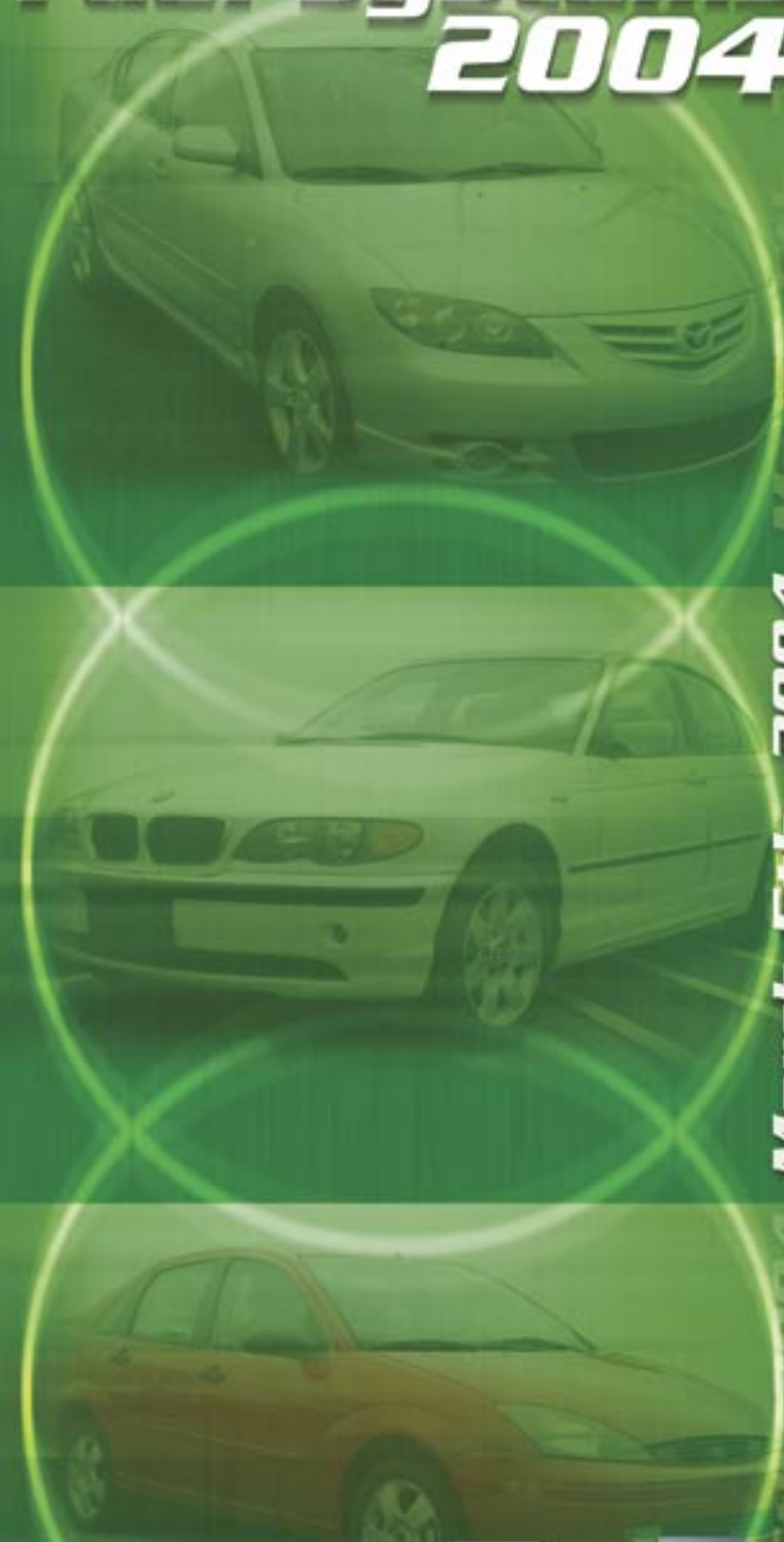
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Automotive Fuel Systems 2004



March 5th, 2004

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**Final
Program**

AGENDA

The only one of its kind, this fifth fuel systems conference will bring executives together from all over the world with a common purpose – to improve fuel system performance and efficiency. Sessions will be moderated by some of the world's leading experts. You'll learn from practicing professionals in key areas of the fuel system including:

- Fuel Vapor Management
- Fuel Lines and Hose
- Low Emission Tank Systems
- Design Trends

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 –**
The ITB Group (U.S.A.)



SESSION 1: FUNCTIONAL COMPONENTS

*Session Moderator: Mitra O'Malley,
The ITB Group*

8:30 a.m. **Innovative Designs with Plastic Fill Pipes**

Inergy Automotive Systems (Belgium)

Technologies have been developed for plastic fuel filler pipes to meet the evolving needs of vehicles. Important characteristics include crash, low permeation requirements and low cost.

9:00 a.m. **Breakthrough in Fuel Pump Technology**

TI Automotive (U.S.A.)

Performance data for a next generation regenerative turbine fuel pump will be presented. Such components have been designed to meet the higher efficiency, higher flow, higher operating pressure system and enhanced hot fuel handling characteristics required by today's automotive customers.

9:30 a.m. **Efficiency – An Overall Target for Developing a New Fuel Supply System**

Robert Bosch Corporation (Germany)

The presentation describes the development of a new fuel supply system. Different pump principles are evaluated and rated. Methods used to reach and verify the complex targets, such as simulation and sophisticated testing, are shown. All this is summarized by examples of measurements from a new generation of fuel pumps and modules, which are under development at Bosch.

10:00 a.m. **Automatic Tank Cap – A Locking LEV II Solution**

Alfmeier (Germany)

Inergy Automotive Systems (France, U.S.A.)

A new modular LEV II capless refueling system developed by Alfmeier in partnership with Inergy will be presented. An overview of the system's components and its performance characteristics will be presented.

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



SESSION 2: FUEL LINE SYSTEMS

*Session Moderator: Michael Harrigan,
Ford Motor Company*

11:00 a.m. **New Developments in Low Permeation Elastomeric Barrier Fuel Hose**

Dyneon (U.S.A.)

The evolution of the THV family of fluoroplastic barrier materials in elastomeric fuel hoses will be reviewed. A demonstration of a hose permeation calculator program will be shown that can predict hose permeation performance. The presentation will also cover a hose construction made from FKM and THV barriers that can meet the PZEV requirements. Preliminary development work on a next generation, melt extrudable, fluoroplastic hose barrier designed to meet future more stringent permeation requirements will be presented.

11:30 a.m. **ETFE/Nylon 12 Two-Layer System for Fuel Lines**

Asahi Glass Fluoropolymers (Japan, U.S.A.)

Ube Industries (Japan)

A new two-layer tube has been developed that consists of ETFE and modified Nylon 12. This system does not need any internal adhesive layer. A discussion of the superior performance attributes of this construction will be provided.

12:00 p.m. **PZEV Material Solutions for Quick Connectors**

A. Raymond (U.S.A.)

A. Raymond has carried out extensive permeation studies to benchmark various connection solutions. The focus has been to assess the performances of different plastic and rubber materials used for liquid fuel connectors. Results clearly show that it is possible to reach quick connector permeation that is well below the 1mg PZEV target.

12:30 p.m. **Spin Welding Connectors to Plastic Fuel Tubing**

ITT Industries –

Fluid Handling Systems (U.S.A.)

This connector technology uses spin welding to assemble a quick connector to plastic monowall and multi-layer fuel tubing. The current industry standard is to mechanically insert a barbed end into the tubing. The bonded joint is an advancement in the long term in terms of structural

integrity of the connection between connector and tube. It has passed all sections of SAE J2044, the industry standard for fuel line quick connectors. Preliminary testing indicates a higher resistance to hydrocarbon permeation than current technologies.

1:00 p.m. Lunch



SESSION 3: FUEL VAPOR MANAGEMENT
*Session Moderator: Phil Yaccarino,
General Motors*

2:00 p.m. Evaporative Emissions Control Technology for PZEV Carbon Canister Applications

Mahle-Tennex North America (U.S.A.)

An overview of the problems that render limitations on carbon canister performance and design (e.g. low purge volume, stringent PZEV/ZEV requirements, carbon working capacity, material cost, etc.) will be followed by a study of the technologies currently used to address these issues. New innovations to achieve both the most severe evaporative emissions performance requirements and the continuous cost reduction demands will be revealed.

2:30 p.m. Super Efficient Activated Carbon Canister Meeting LEV II and PZEV Requirements

Mast Automotive (U.K.)

An approach to improve carbon canister designs to meet LEV II and PZEV emission regulations through the introduction of a purge heater will be discussed. Design objectives, system performance, system costs and technology will be addressed and supported by test results.

3:00 p.m. Methods of Evaporative Emission Control for Engine Intake Systems

Visteon Corporation (U.S.A.)

A comparison of the different methods that can be used for the control or reduction of evaporative emissions through the engine intake system will be provided. These different methods will be evaluated for their effectiveness in achieving PZEV, LEV II, and Tier 2 certification of the total vehicle. The expected new technologies for achieving evaporative emissions control in the intake system will also be reviewed and compared to today's technologies.

3:30 p.m. Mid-Afternoon Break



SESSION 4: FUEL TANK SYSTEMS
*Session Moderator: Dr. Joel Kopinsky,
The ITB Group*

4:00 p.m. New Methodologies Using Advanced CAE Tools to Effectively Reduce Cost and Time from Design to Production of Plastic Fuel Tanks

VITEC LLC (U.S.A.)

The use of newly-developed computer-aided methodologies, proven to effectively reduce product development costs will be demonstrated. Predicted and actual variable wall thickness data, obtained from both simulation and 3D imaging capabilities, are successfully integrated and used within the CAD systems to perform Design Validation studies.

4:30 p.m. MartinX – Improving Fuel Tank Performance

Martinrea International (U.S.A.)

eXess Engineering (Austria)

MartinX is a product that significantly improves the performance of fuel tank systems. The presentation will demonstrate the benefits obtained in the areas of crash integrity, thermal resistance, evaporative emissions, refueling quality, noise reduction, etc. This technology can be incorporated in liquid fuel tanks of any material type or configuration, with no negative effect on fuel capacity.

5:00 p.m. High Volume Production of LEV II Plastic Fuel Tank Systems

Kautex Textron (Canada, Germany)

As co-extruded multi-layer plastic fuel tank systems comply with the new emission requirements, one highlight has been their production on a high volume scale. Improvements in blow molding, cooling, robotic handling within the primary and secondary processes and quality control have made this process more effective. Specific functional tests, including an enhanced leak test designed to comply with stricter evaporative requirements, complete the process.

5:30 p.m. Low Emission Fuel Tank Technologies – An Update

TI Automotive (U.S.A.)

Extensive development efforts have been made for plastic fuel tanks to meet LEV II and PZEV emission targets. The status of these developments will be reviewed.

6:00 p.m. Cocktail Reception

LIST OF EXHIBITORS

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|------------------------|---|
| AISI/SASFT | Dyneon |
| A. Raymond | EMS-GRIVORY |
| Basell Polyolefins | EVAL Company of America |
| BP Solvay Polyethylene | Fuel Systems LLC |
| Daikin America | Hyperion Catalysis |
| Dow Corning | Inergy Automotive Systems |
| DuPont Automotive | ITT Industries – Fluid Handling Systems |

- Martinrea International
- MOCON
- Norma Products
- RTP Company
- Solvay Advanced Polymers
- Ticona

Consulting Expertise



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