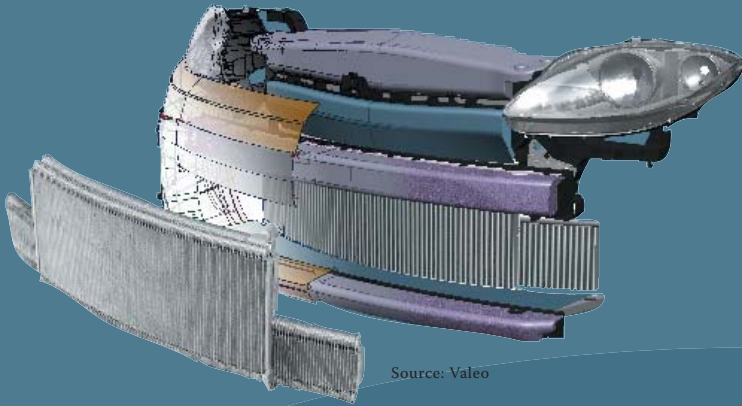


# Automotive Front-End Modules and Cooling Systems 2006



Source: Valeo



Source: HBPO



Source: Decoma International,  
the Exteriors Group of Magna International

## SPONSORS:



Bayer MaterialScience

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## Final Program

November 9, 2006  
Sheraton Detroit Novi Hotel  
Novi, Michigan U.S.A.

# Automotive Front-End Modules and Cooling Systems 2006

## AGENDA

Please note that conference proceedings are not available

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

8:15 a.m. **OPENING REMARKS**  
*Mitra O'Malley, Managing Director  
The ITB Group (U.S.A.)*

## Materials

8:30 a.m. **Funcster® Long-Fiber Reinforced Polypropylene for Front-End Carriers**  
*Chisso (Japan)  
Comusa (U.S.A.)*  
The performance of Chisso's long glass fiber material will be compared to steel and other long glass fiber materials used in carrier applications. This material is already in use for carrier applications in Japan and the U.S.A.

8:50 a.m. **Long Glass Fiber Reinforced Thermoplastics - Longer Fibers for Front-End Applications with the IMC Direct Process**  
*Krauss-Maffei (Germany)*  
State of the art developments in LFT for front-end carriers and the evolution from compression to injection molding will be discussed on several serial applications. Advantages of direct in-line compounding will be compared with standard injection molding. The presentation will conclude with a discussion of future technical developments and trends in front-end modules applications.

9:10 a.m. **Materials and Hose Constructions for Powertrain Cooling Applications**  
*DuPont Automotive (U.S.A.)*  
Quality, durability, warranty, and government actions have been catalyzing upgrades in automotive powertrain applications. Notable among these applications are transmission and engine oil cooler modules. This presentation will discuss material and hose performance data for these applications.

9:30 a.m. **High Performance PPS Polymer Enables Innovative Canned-Pump Principle for Reliable and Efficient Electric Coolant Pump Operation**  
*Ticona Engineering Polymers (U.S.A.)*  
Ticona will discuss an innovative electric coolant pump with a hermetically sealed fluid compartment and internal pump components. An important requirement for operation of this pump is a high-performance material that will

withstand the demanding service conditions. This new electric pump is safe, economical and reliable to operate.

9:50 a.m. **Mid-morning Break**

## Innovations

10:15 a.m. **Future Automotive Technologies for Front-End Modules**  
*Bayer MaterialScience (U.S.A.)*  
New technologies and design concepts in four key areas of front-end modules will be presented: front bumper/energy absorbers, pedestrian safety, lighting systems and paint film.

10:45 a.m. **Developments in Front-End Modules Fastening Technology**  
*Bollhoff Rivnut (U.S.A.)*  
Bollhoff will present recent technical developments for attachment methods in front-end modules that include:  
a. Solutions for both in-molding and after-molding processes  
b. Fastening solutions designed for specific performance criteria  
c. Tolerance compensation system  
d. Innovations in manual, semi-automatic and fully automatic installation methods

11:15 a.m. **The Next Generation Bumper Technology and the P-Tech® Process**  
*Pullman Industries, a Noble Company (U.S.A.)*  
This presentation introduces P-Tech®, a new technology applied to roll-formed products that expands the applicability of Ultra High Strength Steel (UHSS). It bypasses typical manufacturing issues of forming UHSS, reduces piece-to-piece variability, lowers cost and weight, allows for sharing of tools across product families and offers design flexibility to the vehicle's front-end structure.

11:45 a.m. **In-Mold Decorating Solutions for Automotive Exterior Applications**  
*Degussa High Performance Polymers (U.S.A.)*  
This presentation will discuss the role of Nylon 12 films in exterior decorated parts. The main advantages of Nylon 12 films are their excellent chemical resistance, high rigidity, surface hardness, and abrasion resistance.

## Exhibitors:

Bayer MaterialScience  
Bollhoff Rivnut  
Comusa  
Degussa  
Dow Automotive  
Faurecia

Husky Injection Molding Systems  
Krauss-Maffei  
Norma Products  
Quadrant Plastic Composites  
RayConnect  
Ticona Engineering Polymers



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

**1:15 p.m. Hot Forming Process Technology Applications for Bumper Systems**

*Benteler Automotive (U.S.A.)*

This presentation will outline potential benefits of hot-forming technology in UHSS applications, especially for bumper systems. Benchmarking and internal test procedures to ensure the function and validate the product will be presented.

**3:15 p.m. Afternoon Break**

## Lighting

**1:45 p.m. Infrared Reflective Coatings for Automotive Light Shields**

*Illume (U.S.A.)*

Free form and complex reflector headlamps/fog lamps employ light shields to reduce glare and lamp lens heat build-up. By applying coatings with selective radiation reflectance profiles, a shield can be produced that absorbs a high percentage of the visible radiation emitted by the bulb, while at the same time reflects a high percentage of the non-visible infrared radiation. The result is a shield that serves its photometric function at lower operating temperatures.

**2:15 p.m. Effective Mold Building for Automotive Lighting Assemblies Emphasizing Thermoset Reflector Molds with Complex Optic Prescriptions and their Validation with Non-Contact, White Light Scanning**

*Chicago Mold Engineering (U.S.A.)*

Several mold design and build techniques which favorably impact the speed and quality of molded parts for automotive lighting, including cold runner manifolds and center-gating will be addressed. Particular focus will be on the wide range of practical applications of ATOS III, a system integral to the automotive lighting mold building process, including CAD data verification, electrode and steel inspections, tool validation, reverse engineering and molded part analyses.

**2:45 p.m. Saving Lives with Lighting**

*University of Michigan Transportation Research Institute (U.S.A.)*

According to its research, UTERI estimates that over 2,300 lives could be saved per year with perfect light. Dr. Flannagan will break down natural light and crash data studies before explaining drivers' tendency to "overdrive their headlights".

In addition, an analysis of photometric testing will demonstrate that visibility can be increased by over 45% for a driver, while glare can be simultaneously reduced with today's advanced lighting technologies.

## Modules

**3:30 p.m. Integration of Passive and Active Safety Systems in Front-End Modules**

*Faurecia (France)*

Two fields of activity will greatly influence front-end module developments: 1) pedestrian safety protection and 2) electronics in the crash and safety arena. This theme has been sub-divided into two fields: passive safety and active safety. Faurecia will show how these two aspects are successfully integrated in the front-end module without a sacrifice in styling while meeting packaging constraints.

**4:00 p.m. Flexible Designs Using Bonded Hybrid Approach for Front-End Modules**

*Dow Automotive (U.S.A.)*

A bonded approach for joining steel to the plastic front-end carrier will be discussed with a number of design concepts. The adhesive technology including stiffness performance will be reviewed.

**4:30 p.m. Innovative and Safe Front-End Module**

*Valeo (U.S.A.)*

New solutions for the vehicle front-end have been developed that are compliant with pedestrian safety regulations. The know-how of Valeo Lighting Systems and Valeo Engine Cooling contributes to the optimization of headlamps and heat exchangers that help meet the safety requirements. The presentation focuses on the design and performance of the new SAFE module from Valeo.

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

# Consulting Expertise



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