

Automotive and Ground Vehicles: Applications of Materials to Vehicle Designs

Successful vehicle designs greatly depend on the best choice of materials. This track is soliciting papers focused on materials as the basis for a vehicle's performance and handling characteristics, as well as the consumer's desire to purchase a specific product. Engineers highly rely on data-driven digital modeling tools to optimize the choice of materials for an automotive vehicle design. Research and development on materials applications is also being conducted to improve vehicle cost, fuel efficiency, safety, mass, and environmental impact of automobiles. The results of automotive materials research are already being showcased in the Freedom Car project. Collaborative sessions with other symposia are planned.

Topics:

- **Powertrain and Drivetrain Designs** – Dr. Paul Crepeau (paul.n.crepeau@gm.com)
- **Reduction of Noise, Vibration, and Harshness** – Bob Powell (bob.r.powell@gm.com)
- **Safety** – Rowdy Joseph (RJoseph@oh.hra.com)
- **Advanced Design Concepts** – Irina Kalish (irina.kalish@gm.com)
- **Multifunctional Materials** – Dr. Yucong Wang (yucong.wang@gm.com)
- **Armor/Armored Vehicles** – Jim Edler (jpe7@dcx.com)

Co-Organizers:

Dr. Nick Gianaris, General Dynamics Land Systems (gianaris@gdls.com)

John McDonald, General Motors (john.mcdonald@gm.com)



NOTE: These Automotive Sessions are to be approved **Abstract Only** (no formalized paper) followed by the talk at MS&T'07. The Abstract Deadline is March 15, 2007. Presentations are to be a maximum of 15 minutes long with 5 minutes for questions.

Automotive and Ground Vehicles: Materials and Processes for Vehicles

Automobiles are made from a variety of materials using many manufacturing processes. This track is soliciting papers on the materials and the processes required to convert these materials into vehicle components. Special emphasis will be placed on new materials and emerging processing or forming technologies, as well as, understanding how these materials are optimized for the various processes. Collaborative sessions with other symposia are planned.

Processing Topics:

- **Deformation Processes (Forging, Forming, Stamping, Formability/Springback, etc.)** – Paul Krajewski (paul.e.krajewski@gm.com) and Pete Bauerle (pcb7@dcx.com)
- **Solidification Processing of Ferrous Materials** – Dan Wilson (dan.wilson@gm.com)
- **Adhesive Bonding for Automotive Structures** – Gil Chapman (gbchapman2@aol.com)
- **Surface Treatments and Processing (Coatings, etc.)** – Arianna Morales (arianna.morales@gm.com)

Material Topics:

- **Wrought and P/M Light Metals (Aluminum, Magnesium)** – Paul Krajewski (paul.e.krajewski@gm.com)
- **Polymer Materials and their Composites** – Subi Dinda (sdinda@aol.com)
- **Cast Iron** – Phil Seaton (pbs1@dcx.com)
- **Powder Metals** – Jean Lynn (jcl6@dcx.com)

Co-Organizers:

Paul Krajewski, General Motors Corporation (paul.e.krajewski@gm.com)

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