
MATERIALS FOR AUTOMOTIVE AND GROUND VEHICLES

The automobile industry has a long history of materials and materials processing innovation. Increasing requirements on vehicle safety, cost, fuel economy, and performance have resulted in higher demand for new materials solutions. As a result, emerging materials such as aluminum, magnesium, titanium, carbon fiber composites, and diamond-like carbon coatings have found increasing application in vehicles.

This volume captures a collection of papers that were presented at the 2007 Materials Science & Technology meeting in Detroit, MI, as part of the Automotive and Ground Vehicles Symposium, which consisted of two tracks: “Materials and Processes for Vehicles” and “Applications of Materials to Ground Vehicles.” This symposium was organized and sponsored by the ASM Detroit Chapter and cosponsored by the Shaping and Forming Committee of the Materials Processing and Manufacturing Division (MPMD) within The Minerals, Metals, and Materials Society (TMS). The symposium was held over 4 days and consisted of the following sessions: “Advanced Materials and Processes,” “Armor/Armored Vehicles,” “Multifunctional Materials,” “Joining and Creation of Advanced Structures,” “Next Generation Lightweight Materials—Mg and Ti,” “Formability and Deformation,” “Elevated Temperature Forming,” “Aluminum: Alloy Development and Microstructure,” “Tribology, Surfaces, Lubricants, and Coatings,” “Cast Iron”, and “Stainless and Powdered Metals.”

This edition of *JMEP* captures papers from a cross section of these sessions and provides a glimpse into the future of automotive materials.

The authors would like to thank ASM International for allowing this set of papers to be published in this volume, and especially want to acknowledge the helpful contributions of Diane Grubbs and Dr. Jeffrey Hawk. We also would like to acknowledge Dale Wetzel for his organization of the MS&T session on behalf of the Detroit Chapter of ASM International.



Paul E. Krajewski and Arianna T. Morales
General Motors Research and Development Center,
Warren, MI, USA.
e-mails: paul.e.krajewski@gm.com;
arianna.morales@gm.com