This book focuses on using plastics in automobiles for traditional applications such as interiors and body panels, and for more advanced applications such as glazing and under-the-hood components. It provides application technology development for various aspects of automotive design—concept design, CAD modeling, predictive engineering methods through CAE, manufacturing method simulation, and prototype and tool making. It is based on a decade of research and real-world application of the authors.

Described are design and manufacturing aspects of energy absorbers, fenders, front-end modules, instrument panels, steering wheels, headlamp assemblies, throttle bodies, glazing, and tailgates, as well as exterior components such as roof racks, wipers, door handles, and rearview mirror assemblies. Using engineering thermoplastics for such applications will improve safety and reduce the weight of next-generation automobiles.

Readers will gain an understanding of design and manufacturing methodologies of plastics and the means to apply them to a particular vehicle platform. The intent is to help further engineering expertise about using plastics in automobiles so that they can be safer, lighter, and more energy efficient.

About the Editor
Sudhakar R. Marur led the plastics application technology laboratory, as its technical director, for SABIC Innovative Plastics in Bangalore, India. Under his leadership, the team developed plastics application solutions for automotive companies worldwide. He has more than 23 years of experience in industrial R&D. He earned his PhD from the Indian Institute of Technology (IIT), Bombay, specializing in computational nonlinear structural dynamics, and did his postdoctoral research on nonlinear vibrations and elementology at National Aerospace Laboratories.
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