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Nota di contenuto	Chapter 1: Opportunities For Lighter Weight And Lower Total Cost Component Manufacturing -- Chapter 2: Lightweighting and the Future of Aerospace Metals -- Chapter 3: Exploring the Trends, Opportunities and Aluminum Solutions Behind Automotive Material Innovation -- Chapter 4: The role of Materials Engineer in the product cycle- A new Outlook -- Chapter 5: Light-Weighting In Transportation And Defense Using Aluminium Foam Sandwich Structures -- Chapter 6: Innovations In Materials & Engineering For Light-Weighting Aircraft -- Chapter 7: Trends In Automotive Light Weighting -- Chapter 8: Advances in Test Techniques to Characterize Fatigue and Fracture Properties for Safety

Critical Applications.

Sommario/riassunto

This book covers recent developments and current status of various materials, designs, and manufacturing practices which together contribute towards weight reduction of systems used in defense, aerospace, and automotive sectors. The topics covered in the volume range from new manufacturing methods such as additive manufacturing, intermetallics, aluminum-based solutions, near net-shaped processes, ultra-light weight metal foam and honeycomb based sandwich structures, advanced high strength steels, magnesium alloy castings and carbon fiber composites. It also talks about specific manufacturing and characterization techniques, property variability and reliability of light weight components. This volume will be useful to researchers, professionals, and students working in the fields of aerospace, transportation and defense.