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Soggetti	Composite materials Building materials Materials Mechanics, Applied Automotive engineering Aerospace engineering Astronautics Composites Wood, fabric, and textiles Materials Engineering Engineering Mechanics Automotive Engineering Aerospace Technology and Astronautics
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Nota di contenuto	High Performance Textile Reinforcements and Composites -- Effect of Reinforcement Architecture on the Mechanical Properties of Textile Composite -- Effect of Fiber Surface Treatment on Mechanical Properties of Textile Composites -- Mechanical Behavior of Advanced Textile Reinforced Composites under Quasi-Static and Dynamic Loading -- Fracture and Fatigue Behavior of High-Performance Textile Reinforced Composites -- Micro, Meso and Macro Scale Modeling of Textile Reinforcements and Composites -- Sustainability and Recycling of Textile Reinforced Composites -- Hybrid Polymer Textile

Composites for Defence Applications -- High-Performance Textile Composites: Aerospace and Automobile Applications.

Sommario/riassunto

This edited book provides an in-depth overview of high-performance textile reinforcements and composites, emphasizing both experimental characterization and numerical modeling methodologies tailored for defense, aerospace, and automotive applications. This comprehensive resource covers experimental and modeling strategies to understand how textile reinforcements and composites perform under diverse loading and boundary conditions, crucial for demanding high-performance environments. It includes detailed chapters on composite fabrication methodologies, experimental responses of textile composites under varying loads, and the unique characteristics of these materials. A dedicated chapter discusses the latest advances in numerical modeling techniques for complex textile reinforcements and composites, addressing challenges in simulation. The book covers a broad spectrum of topics, including the fabrication of textile composites, the impact of various parameters on mechanical properties, interlaminar fracture behavior, and interlaminar shear strength. It also discusses key trends and the potential of cutting-edge materials and techniques in high-performance applications, specifically in defense, automotive, and aerospace industries. The book highlights recent advancements in textile composites, focusing on modeling and experimentation that drive the development of high-performance materials across various sectors. It is poised to be an essential resource for researchers and engineers exploring the field of textile composites for advanced applications.
