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Titolo	Fibrous and Textile Materials for Composite Applications // edited by Sohel Rana, Raul Fangueiro
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2016
ISBN	981-10-0234-7
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (400 p.)
Collana	Textile Science and Clothing Technology, , 2197-9863
Disciplina	540
Soggetti	Textile industry Materials science Nanochemistry Chemical engineering Industrial engineering Production engineering Textile Engineering Characterization and Evaluation of Materials Industrial Chemistry/Chemical Engineering Industrial and Production Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Introduction to Composite Materials -- Fiber Architectures for Composite Applications -- Synthetic Fibres for Composite Applications -- Natural Fibers for Composite Applications -- Metallic Fibers for Composite Applications -- Carbon Nanofibers and Nanotubes for Composite Applications -- Surface Preparation of Fibres for Composite Applications -- Reinforcements and Composites with Special Properties -- Comparison of Performance, Cost-effectiveness and Sustainability.
Sommario/riassunto	This book focuses on the fibers and textiles used in composite materials. It presents both existing technologies currently used in commercial applications and the latest advanced research and developments. It also discusses the different fiber forms and architectures, such as short fibers, unidirectional tows, directionally oriented structures or advanced 2D- and 3D-textile structures that are

used in composite materials. In addition, it examines various synthetic, natural and metallic fibers that are used to reinforce polymeric, cementitious and metallic matrices, as well as fiber properties, special functionalities, manufacturing processes, and composite processing and properties. Two entire chapters are dedicated to advanced nanofiber and nanotube reinforced composite materials. The book goes on to highlight different surface treatments and finishes that are applied to improve fiber/matrix interfaces and other essential composite properties. Although a great deal of information about fibers and textile structures used for composite applications is already available, this is the only book currently available that discusses all types of fibers and structures used to reinforce polymers, cement, metal or soil to improve their general performance and multi-functional behaviors. As such, it fills an important gap in the available literature and provides a valuable resource for a wide range of students and researchers from academia and industry.
