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Nota di contenuto	Frontmatter -- Preface -- Contents -- 1 Cellulose and potential reinforcement -- 2 Preparation of microfibrillated cellulose -- 3 Preparation of cellulose nanocrystals -- 4 Bacterial cellulose -- 5 Chemical modification of nanocellulose -- 6 Rheological behavior of nanocellulose suspensions and self-assembly -- 7 Processing of nanocellulose-based materials -- 8 Thermal properties -- 9 Mechanical properties of nanocellulose-based nanocomposites -- 10 Swelling and barrier properties -- 11 Other polysaccharide nanocrystals -- 12 Conclusions, applications and likely future trends -- 13 Index
Sommario/riassunto	This specialist monograph provides an overview of the recent research on the fundamental and applied properties of nanoparticles extracted from cellulose, the most abundant polymer on the planet and an essential renewable resource. Given the rapid advancements in the field and the high level of interest within the scientific and industrial communities, this timely book will be required reading for all those working with nanocellulose in the life sciences and bio-based applications, biological, chemical and agricultural engineering, organic chemistry and materials science. The author pioneered the use of cellulose nanoparticles (cellulose nanocrystals or whiskers and cellulose

microfibrils) in nanocomposite applications.The book combines a general introduction to cellulose and basic techniques with more advanced chapters on specific properties and applications of nanocellulose.