

1. Record Nr.	UNINA9910734357903321
Titolo	Cellulose (Nano)Composites // edited by Denis Mihaela Panaitescu, Adriana Nicoleta Frone
Pubbl/distr/stampa	Basel : , : MDPI - Multidisciplinary Digital Publishing Institute, , 2023
Descrizione fisica	1 online resource (248 pages)
Disciplina	547.7
Soggetti	Cellulose - Chemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	<p>Our environment has been severely affected by the intensive production and use of plastics derived from fossil fuels and their uncontrolled end-of-life disposal. The return to using natural products is a characteristic of the most recent decades, and nanocellulose occupies a privileged position among these intensively studied products. Nanocellulose is obtained from cellulose, which is the most abundant natural polymer, by applying different chemical, mechanical, enzymatic and, most often, combined methods. A huge effort has been invested in the application of nanocellulose as a modifier or reinforcing agent in polymer nanocomposites. This Special Issue brings together twelve original articles and studies that contribute to our understanding of the fundamental and technological knowledge of cellulose-polymer nanocomposites. The isolation of nanocellulose from cheap sources and, especially, from agro-food industry waste is an important step to be implemented for cost reduction and environmental protection. An appropriate surface treatment of nanocellulose is a key element for achieving a good interfacial adhesion and superior properties in polymer nanocomposites. The use of more appropriate and green solvent systems for cellulose, the use of biobased plasticizers and toughening agents in nanocellulose nanocomposites, and the use of molecular dynamics simulations for the prediction of the compatibility of cellulose blends are valuable methods for expanding the application of nanocellulose.</p>

