1. Record Nr. UNINA9910346685103321

Autore	Cinelli Patrizia
Titolo	Synthesis and Applications of Biopolymer Composites / Patrizia Cinelli, Ana Díez-Pascual
Pubbl/distr/stampa	MDPI - Multidisciplinary Digital Publishing Institute, 2019 Basel, Switzerland : , : MDPI, , 2019
ISBN	9783039211333 3039211331
Descrizione fisica	1 electronic resource (312 pages)
Soggetti	Technology: general issues
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	This book, as a collection of 17 research articles, provides a selection of the most recent advances in the synthesis, characterization, and applications of environmentally friendly and biodegradable biopolymer composites and nanocomposites. Recently, the demand has been growing for a clean and pollution-free environment and an evident target regarding the minimization of fossil fuel usage. Therefore, much attention has been focused on research to replace petroleum-based commodity plastics by biodegradable materials arising from biological and renewable resources. Biopolymers-polymers produced from natural sources either chemically from a biological material or biosynthesized by living organisms-are suitable alternatives for addressing these issues due to their outstanding properties, including good barrier performance, biodegradation ability, and low weight. However, they generally possess poor mechanical properties, a short fatigue life, low chemical resistance, poor long-term durability, and limited processing capability. In order to overcome these deficiencies, biopolymers can be reinforced with fillers or nanofillers (with at least one of their dimensions in the nanometer range). Bionanocomposites are advantageous for a wide range of applications, such as in medicine, pharmaceutics, cosmetics, food packaging, agriculture, forestry,

electronics, transport, construction, and many more.

2. Record Nr. UNINA9910254029403321

Autore	Schmerr Jr Lester W
Titolo	Fundamentals of Ultrasonic Nondestructive Evaluation : A Modeling Approach / / by Lester W. Schmerr Jr
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
ISBN	3-319-30463-1
Edizione	[2nd ed. 2016.]
Descrizione fisica	1 online resource (765 p.)
Collana	Springer Series in Measurement Science and Technology, , 2198-7807
Disciplina	620.11
Soggetti	Materials science Mechanics Mechanics, Applied Field theory (Physics) Radiology Applied mathematics Engineering mathematics Acoustics Characterization and Evaluation of Materials Solid Mechanics Classical and Continuum Physics Ultrasound Mathematical and Computational 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 and index.
Nota di contenuto	An Ultrasonic System -- Linear Systems and the Fourier Transform -- Wave Motion Fundamentals -- Propagation of Bulk Waves -- The Reciprocal Theorem and Other Integral Relations -- Reflection and Transmission of Bulk Waves -- Propagation of Plate and Surface Waves -- Ultrasonic Transducer Radiation -- Material Properties and System

Function Determination -- Flaw Scattering -- The Transducer Reception Process -- Ultrasonic Measurement Models -- Near Field Measurement Models -- Quantitative Ultrasonic NDE With Models -- Model-Based Flaw Sizing -- Probability of Detection and Reliability -- Appendix A. The Fourier Transform -- Appendix B. The Dirac Delta Function -- Appendix C. Basic Notations and Concepts -- Appendix D. The Hilbert Transform -- Appendix E. The Method of Stationary Phase -- Appendix F. Properties of Ellipsoids -- Appendix G. MATLAB Functions and Scripts.

Sommario/riassunto

This extensively revised and updated second edition of a widely read classic presents the use of ultrasound in nondestructive evaluation (NDE) inspections. Retaining the first edition's use of wave propagation /scattering theory and linear system theory, this volume also adds significant new material including: the introduction of MATLAB® functions and scripts that evaluate key results involving beam propagation and scattering, flaw sizing, and the modeling of ultrasonic systems. elements of Gaussian beam theory and a multi-Gaussian ultrasonic beam model for bulk wave transducers. a new chapter on the connection between ultrasonic modeling and probability of detection (POD) and reliability models. new and improved derivations of ultrasonic measurement models. updated coverage of ultrasonic simulators that have been developed around the world. Students, engineers, and researchers working in the ultrasonic NDE field will find a wealth of information on the modeling of ultrasonic inspections and the fundamental ultrasonic experiments that support those models in this new edition.