Record Nr. Autore Titolo Pubbl/distr/stampa	UNINA9910141293003321 Wendorff Joachim H Electrospinning [[electronic resource]]: materials, processing, and applications / / Joachim H. Wendorff, Seema Agarwal, Andreas Greiner Weinheim; ; Hoboken, New Jersey, : John Wiley & Sons, Inc., 2012
ISBN	3-527-64772-4 1-280-66775-3 9786613644688 3-527-64770-8 3-527-64773-2
Descrizione fisica	1 online resource (255 p.)
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Disciplina	610.284 620.5
Soggetti	Electrospinning Polymers - Electric properties
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 and index.
Nota di contenuto	Electrospinning; Contents; Preface; 1: Introduction; 1.1: Fibers - Key Functional Elements in Technology and Nature; 1.2: Some Background Information; 1.2.1: Structure of Crystalline and Amorphous Materials; 1.2.2: Chain Conformation and Structures of Polymer Materials; 1.3: Processing of Polymer Materials towards Fibers - Fiber Extrusion; 1.4: Routes to More Advanced Fibers - Mimicking Nature; 1.5: Electrospinning; 1.5.1: A Simple Experimental Approach; 1.5.2: The Hidden Physical Complexity; 1.5.3: Short History of Electrospinning - The Routes Go Back More Than Two Centuries 1.6: Electrospinning - Important Facts to RememberReferences; 2: Nature of the Electrospinning Process - Experimental Observations and Theoretical Analysis; 2.1: Experimental Setups; 2.2: Experimental Observations on Fiber Formation; 2.2.1: Droplet Formation at the Tip of the Die; 2.2.2: The Straight Path of the Jet; 2.2.3: The Looping Part of the Jet - Onset of Bending Instabilities; 2.2.4: The Deposition Process; 2.3: Theoretical Analysis of the Nature of the Electrospinning

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	Processes; 2.3.1: Droplet Deformation and Onset of Jetting; 2.3.2: Linear Path of the Jet 2.3.3: The Path of the Jet Submitted to Bending2.3.4: Deposition on a Substrate; 2.3.5: Onset of Further Instabilities; 2.3.6: Branching Processes; 2.4: Nature of the Electrospinning Process - Important Facts to Remember; References; 3: Nanofiber Properties; 3.1: Parameters Controlling Nanofiber Formation; 3.2: Short Account on Methods of Analysis for the Structure of Electrospun Nanofibers; 3.2.1: Analysis of Fiber Geometry and Topology; 3.2.2: Analysis of the Internal Fiber Morphology; 3.3: Control of Nanofiber Diameters; 3.3.1: The Feeding Rate 3.3.2: Concentration of Polymer Spinning Solution3.3.3: Electrical Parameters: Applied Voltage, Electrode Distance, Conductivity; 3.3.4: Additional Factors; 3.3.5: Mixtures of Solvents/Nonsolvents; 3.4: Shape of the Fibers; 3.5: Nanofiber Topologies, Porous Fibers; 3.6: Nanofiber Trajectories in the Deposition Plane; 3.7: Internal Morphology of Electrospun Nanofibers; 3.7.1: Amorphous Polymers; 3.7.2: Partial Crystalline Nanofibers; 3.8: Mechanical Properties of Single Nanofibers; 3.9: Nanofiber Properties - Important Facts to Remember; References 4: Nonwovens Composed of Electrospun Nanofibers4.1: Nanofiber Nonwovens - Functional Elements for Technical Applications; 4.2: Methods of Analysis for Properties on Nonwovens; 4.2.1: Nonwoven Architecture and Total Porosity; 4.2.2: Analysis of Pore Sizes; 4.2.3: Internal Specific Surface and Permeation Coefficient; 4.2.4: Permeation Coefficient; 4.3: Fiber Arrangements in Nonwovens; 4.4: Heterogeneous Nonwovens; 4.5: Porosity and Pore Structures - Theoretical Modeling and Experimental Analysis; 4.5.1: Prediction of Monte Carlo Simulations; 4.5.2: Experimental Results 4.5.3: Nonwoven with Unimodal Fiber Diameter Distribution
Sommario/riassunto	Electrospinning is from the academic as well as technical perspective presently the most versatile technique for the preparation of continuousnanofi bers obtained from numerous materials including polymers, metals, and ceramics. Shapes and properties of fi bers can be tailoredaccording to the demand of numerous applications including filtration, membranes, textiles, catalysis, reinforcement, or biomedicals. This book summarizes the state-of-the art in electrospinning with detailed coverage of the various techniques, material systems and theirresulting fi ber structures and prope