Record Nr. UNINA9910140562503321 Industrial application of natural fibres [[electronic resource]]: **Titolo** structure, properties, and technical applications / / edited by Jorg Mussig Chichester, West Sussex, U.K.; Hoboken, NJ,: Wiley, 2010 Pubbl/distr/stampa **ISBN** 1-282-68660-7 9786612686603 0-470-66032-5 0-470-66034-1 Descrizione fisica 1 online resource (564 p.) Collana Wiley series in renewable resources Altri autori (Persone) MussigJorg Disciplina 677 677.02832 Soggetti Plant fibers - Industrial applications Animal fibers - Industrial applications Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Industrial Applications of Natural Fibres; Contents; Series Preface; Preface; Foreword; List of Contributors; List of Illustrators; PART I BACKGROUND: 1 Historic Usage and Preservation of Cultural Heritage: 2 What Are Natural Fibres?; 2.1 Chemistry of Plant Fibres; 2.2 Natural Fibres - Function in Nature; 2.3 Types of Fibre; 3 Economic Aspects; 3.1 Grades and Standards; 3.2 Technical Applications of Natural Fibres: An Overview; 3.3 Natural Fibres in Technical Applications: Market and Trends; PART II VEGETABLE FIBRES; 4 Flax - Structure, Chemistry, Retting and Processing 5 Hemp - Cultivation, Extraction and Processing Jute - A Versatile Natural Fibre. Cultivation, Extraction and Processing; 7 Abac -

5 Hemp - Cultivation, Extraction and Processing6 Jute - A Versatile
Natural Fibre. Cultivation, Extraction and Processing; 7 Abac Cultivation, Extraction and Processing; 8 Sisal - Cultivation, Processing
and Products; 9 Coir - Coconut Cultivation, Extraction and Processing
of Coir; 10 Cotton Production and Processing; PART III ANIMAL FIBRES;
11 Mulberry Silk, Spider Dragline and Recombinant Silks; 12 Wool Structure, Mechanical Properties and Technical Products based on
Animal Fibres; PART IV TESTING AND QUALITY MANAGEMENT

13 Testing Methods for Measuring Physical and Mechanical Fibre Properties (Plant and Animal Fibres)14 SEM Catalogue for Animal and Plant Fibres; 15 Combined (In Situ) Methods; 16 DNA-Analytical Identification of Species and Genetic Modifications in Natural Fibres; 17 Cotton/Worldwide Harmonisation; 18 Flax - ASTM Standardisation and Harmonisation; PART V APPLICATIONS: CURRENT AND POTENTIAL; 19 Composites; 19.1 Historical, Contemporary and Future Applications; 19.2 Design, Material Properties and Databases; 19.3 Natural Fibre Composite Processing: A Technical Overview 19.4 Natural Fibre-Reinforced Polymers in Automotive Interior Applications19.5 Composites Based on Natural Resources; 19.6 Cellulose Nanocomposites; 20 Insulation Materials Based on Natural Fibres; 21 Natural Fibres in Geotextiles for Soil Protection and Erosion Control; Index

Sommario/riassunto

Natural fibres are becoming increasingly popular for use in industrial applications, providing sustainable solutions to support technical innovation. These versatile, natural based materials have applications in a wide range of industries, from textiles and consumer products to the automotive and construction industries. Industrial Applications of Natural Fibres examines the different steps of processing, from natural generation, fibre separation and fibre processing, to the manufacturing of the final product. Each step is linked to fibre properties and characterization, highlighting