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Nota di contenuto	Handbook of Bioplastics and Biocomposites Engineering Applications; Contents; Foreword; Preface; List of Contributors; 1. Engineering Applications of Bioplastics and Biocomposites - An Overview; 1.1 Introduction; 1.1.1 Bioplastics; 1.1.2 Biocomposites; 1.2 Engineering Applications of Bioplastics and Biocomposites; 1.2.1 Processing of Bioplastics and Biocomposites; 1.2.2 Packaging Applications of Bioplastics and Biocomposites; 1.2.3 Civil Engineering Applications of Bioplastics and Biocomposites; 1.2.4 Biomedical Applications of Bioplastics and Biocomposites 1.2.5 Automotive Applications of Bioplastics and Biocomposites1.2.6 General Engineering Applications of Bioplastics and Biocomposites; 1.3 Conclusions; References; Part 1: Processing of Bioplastics and Biocomposites; 2. The Handling of Various Forms of Dry Ingredients in Bioplastics Manufacturing and Processing Applications; 2.1

Introduction; 2.2 Ingredient Properties Affecting Feedrates and Dry Ingredients Handling; 2.2.1 Name; 2.2.2 Bulk Density; 2.2.3 Compressibility; 2.2.4 Particle Form; 2.2.5 Particle Size; 2.2.6 Angle of Repose; 2.2.7 Angle of Slide; 2.2.8 Packing and Compaction 2.2.8.1 Packing, By Pressure 2.2.8.2 Compacting, By Vibration; 2.2.9 Moisture Content; 2.3 Storage Hoppers and Ingredient Activation; 2.3.1 Vibration; 2.3.2 Internal Stirring Agitation; 2.3.3 Concentric Screw Agitation; 2.3.4 External Agitation (Flexible Hopper); 2.4 Volumetric Feeders; 2.4.1 Single Screw Feeders - Sizing and Feed Rate Calculation; 2.4.1.1 Screw Sizing; 2.4.1.2 Screw Fill Efficiency; 2.4.1.3 Feed Rate Calculation; 2.4.1.4 Feeder Selection; 2.4.1.5 Spiral Screw; 2.4.1.6 Blade Screw; 2.4.2 Twin Screw Feeders; 2.4.2.1 Twin Concave Screws; 2.5 Vibrating Tray Feeders 2.6 Belt Feeders 2.7 Loss-In-Weight Feeders; 2.7.1 Scale; 2.7.2 Feed Device; 2.7.3 Weigh Hopper; 2.7.4 Feeder Controller; 2.7.5 Refill Device; 2.7.6 Principle of Operation-Continuous Feeding from a Loss-In Weight Feeder; 2.7.7 Loss-In-Weight Feeding Helpful Comments; 2.7.7.1 Refilling a Loss-In-Weight Feeder; 2.7.7.2 Venting a Loss-In-Weigh Feeder; 2.7.7.3 In Plant Vibration Effects on Feeder Performance; 2.7.7.4 Temperature Effects in Feeder Performance; 2.7.7.5 Scale Stabilization Time; 2.7.7.6 Flexible Connections; 2.8 Special Feeders for BioPlastics Ingredients 2.8.1 Bio Ingredients-Typical Physical Characteristics 2.8.2 The Physical Characteristics Aggravate Controlled Rate Feeding; 2.8.3 Fibers Need to be Tested in Feeders to Determine How They Can Be Fed; 2.8.3.1 Start with a Traditional Feeding Device, Example a Screw Feeder; 2.8.4 Feeder Control and Checking the Feed Rate; 2.8.5 Ingredient Storage and Keeping the Feeder Full; 2.9 Conclusions; 3. Modeling the Processing of Natural Fiber Composites Made Using Liquid Composite Molding; 3.1 Introduction to Liquid Composite Molding (LCM) Processes 3.2 Introduction to the Use of Bio-fibers and Bio-resins in Polymer Composites

Sommario/riassunto

"The Handbook of Bioplastics & Biocomposites Engineering Applications brings together scientists, from academia and industries, to report on current research and applications, in the bioplastics and biocomposites arena, that integrates pure and applied sciences such as chemistry, engineering and materials science. The Handbook focuses on five main categories of applications: Packaging, Civil Engineering, Biomedical, Automotive, General Engineering"--
