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Nota di contenuto	Extrusion Processing Technology Foodand Non-Food Biomaterials; Copyright; Contents; Foreword; Acknowledgements; 1 Generic Extrusion Processes; 1.1 A history of extrusion processing technology; 1.1.1 The introduction of screw extruders; 1.1.2 The generic extrusion process concept; 1.1.3 Extrusion technology in the polymer-processing industry; 1.1.4 Extrusion technology in the food- and feed-processing industry; 1.1.5 Extrusion technology in the paper-milling industry; 1.2 Factors driving the development of extrusion processing technology; 1.2.1 Process productivity 1.2.2 Product innovation and functionality1.2.3 Environmentally friendly processing; 1.3 The industrial and economic importance of extrusion processing technology; 1.3.1 In the polymer and plastics industry; 1.3.2 In the food and feed industry; 1.3.3 In the paper milling industry; 1.4 Contents and structure of the book; References; 2 Extrusion Equipment; 2.1 Extruders; 2.1.1 The kinematics of extruders; 2.1.2 The screw-barrel assembly; 2.1.3 The die assembly; 2.1.4 The central operating cabinet; 2.2 Extruder screw-barrel

configurations; 2.2.1 Single screw extruders
 2.2.2 Intermeshing co-rotating twin screw extruders
 2.2.3 Screw-barrel configuration and wear; 2.3 Ancillary equipment; 2.3.1 Upstream ancillary equipment; 2.3.2 On-line ancillary equipment; 2.3.3 Downstream ancillary equipment; References; 3 Extrusion Engineering; 3.1 Thermomechanical processing in screw extruders; 3.1.1 Process configuration of single screw extruders; 3.1.2 Process configuration of intermeshing co-rotating twin screw extruders; 3.1.3 Processing specificities; 3.2 Thermomechanical flow in screw extruders; 3.2.1 Modeling approaches; 3.2.2 Solids conveying section 3.2.3 Melt conveying section 3.2.4 Single screw extrusion versus twin screw extrusion; 3.3 Thermomechanical extrusion processing: numerical methods; 3.3.1 Single screw extrusion; 3.3.2 Twin screw extrusion; 3.3.3 Commercial software; References; 4 The Generic Extrusion Process I: Thermomechanical Plasticating of Polymers and Polymer Melt Forming; 4.1 The bio-based polymers and bio-based plastics; 4.1.1 Definitions; 4.1.2 Macromolecular characteristics of bio-based polymers; 4.2 Melting mechanism of polymer materials in screw extruders
 4.2.1 Melting mechanism in single screw extruders: qualitative description
 4.2.2 Engineering analysis of polymer melting in single screw extruders; 4.2.3 Melting mechanism in intermeshing co-rotating twin screw extruders; 4.2.4 Polymer melting: single screw extrusion versus twin screw extrusion; 4.3 Physical transitions of bio-based polymers; 4.3.1 Physical transitions of polymeric materials: generalities; 4.3.2 Glass and melting transitions: basics; 4.3.3 Glass and melting transitions of bio-based polymers; 4.4 Flow properties of bio-based polymer melts; 4.4.1 Flow behavior: basics
 4.4.2 Measurement of flow properties of polymer melts

Sommario/riassunto

The only up-to-date book on this important technology, *Extrusion Processing Technology: Food and Non-Food Biomaterials* bridges the gap between the principles of extrusion science and the practical "know how" of operational engineers and technicians. Written by internationally renowned experts with over forty years of experience between them, this valuable reference for food scientists, food engineers, chemical engineers, and students includes coverage of new, greener technologies as well as case studies to illustrate the practical, real-world application of the principles in various s
