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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Polymer Processing; Contents; Preface; Preface to the First Edition; Acknowledgments; 1 Importance of Process Design; 1.1 Classification of Polymer Processes; 1.2 Film Blowing: Case Study; 1.3 Basics of Polymer Process Design; References; 2 Isothermal Flow of Purely Viscous Non-Newtonian Fluids; DESIGN PROBLEM I DESIGN OF A BLOW MOLDING DIE; 2.1 Viscous Behavior of Polymer Melts; 2.2 One-Dimensional Isothermal Flows; 2.2.1 Flow Through an Annular Die; 2.2.2 Flow in a Wire Coating Die; 2.3 Equations of Change for Isothermal Systems; 2.4 Useful Approximations; 2.5 Solution to Design Problem I 2.5.1 Lubrication Approximation Solution2.5.2 Computer Solution; Problems; References; 3 Viscoelastic Response of Polymeric Fluids and Fiber Suspensions; DESIGN PROBLEM II DESIGN OF A PARISON DIE FOR A VISCOELASTIC FLUID; 3.1 Material Functions for Viscoelastic Fluids; 3.1.1 Kinematics; 3.1.2 Stress Tensor Components; 3.1.3 Material Functions for Shear Flow; 3.1.4 Shear-Free Flow Material Functions; 3.2 Nonlinear Constitutive Equations; 3.2.1 Description of Several Models; 3.2.2 Fiber Suspensions; 3.3 Rheometry; 3.3.1 Shear Flow Measurements; 3.3.2 Shear-Free Flow Measurements

3.4 Useful Relations for Material Functions
3.4.1 Effect of Molecular Weight; 3.4.2 Relations Between Linear Viscoelastic Properties and Viscometric Functions; 3.4.3 Branching; 3.5 Rheological Measurements and Polymer Processability; 3.6 Solution to Design Problem II; Problems; References; 4 Diffusion and Mass Transfer; DESIGN PROBLEM III DESIGN OF A DRY-SPINNING SYSTEM; 4.1 Mass Transfer Fundamentals; 4.1.1 Definitions of Concentrations and Velocities; 4.1.2 Fluxes and Their Relationships; 4.1.3 Ficks First Law of Diffusion; 4.1.4 Microscopic Material Balance
4.1.5 Similarity with Heat Transfer: Simple Applications
4.2 Diffusivity, Solubility, and Permeability in Polymer Systems; 4.2.1 Diffusivity and Solubility of Simple Gases; 4.2.2 Permeability of Simple Gases and Permchor; 4.2.3 Moisture Sorption and Diffusion; 4.2.4 Permeation of Higher-Activity Permeants; 4.2.5 Polymer-Polymer Diffusion; 4.2.6 Measurement Techniques and Their Mathematics; 4.3 Non-Fickian Transport; 4.4 Mass Transfer Coefficients; 4.4.1 Definitions; 4.4.2 Analogies Between Heat and Mass Transfer; 4.5 Solution to Design Problem III; Problems; References
5 Nonisothermal Aspects of Polymer Processing
DESIGN PROBLEM IV
CASTING OF POLYPROPYLENE FILM; 5.1 Temperature Effects on Rheological Properties; 5.2 The Energy Equation; 5.2.1 Shell Energy Balances; 5.2.2 Equation of Thermal Energy; 5.3 Thermal Transport Properties; 5.3.1 Homogeneous Polymer Systems; 5.3.2 Thermal Properties of Composite Systems; 5.4 Heating and Cooling of Nondeforming Polymeric Materials; 5.4.1 Transient Heat Conduction in Nondeforming Systems; 5.4.2 Heat Transfer Coefficients; 5.4.3 Radiation Heat Transfer; 5.5 Crystallization, Morphology, and Orientation
5.5.1 Crystallization in the Quiescent State

Sommario/riassunto

Emphasizing fundamental concepts that allow a student, novice, or practicing engineer to carry out practical design decisions, *Polymer Processing: Principles and Design* provides the numerical methods required to solve the equations using a computer and easy-to-use IMSL numerical subroutines, ensuring a solid foundation in the principles underlying the design of polymer processing techniques. Presenting the background required to design processes for thermoplastics, this thoroughly updated second edition adds a ""Green Engineering"" component and a CD with numerical subroutines guidance

2. Record Nr.	UNISA996387606503316
Autore	Byfield Nicholas <1579-1622.>
Titolo	The rule of faith, or, An exposition of the Apostles Creed [[electronic resource]] : so handled as it affordeth both milke for babes, and strong meat for such as are at full age / / by ... Nicholas Bifield ; ... now published ... by his sonne, Adoniram Bifield
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Altri autori (Persone)	ByfieldAdoniram <d. 1660.>
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Note generali	Includes index. Signatures: A B-Z 2A-2I 2K-2X 2Y-2Z 3A. Numerous errors in paging. Reproduction of original in the Harvard University. Library.
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