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Nota di contenuto	Contents -- The Author -- Preface to the Third Edition -- Preface to the Second Edition -- Preface to the First Edition -- 1 Introduction to Scientific Processing -- 1.1 The Evolution and Progress of Injection Molding -- 1.2 The Molding Process -- 1.3 The Three Types of Consistencies Required in Injection Molding -- 1.4 Scientific Processing -- 1.5 The Five Critical Factors of Molding -- 1.5.1 Part Design -- 1.5.2 Material Selection -- 1.5.3 Mold Design and Construction -- 1.5.4 Machine Selection -- 1.5.5 Molding Process -- 1.6 Concurrent Engineering -- 1.7 Variation -- 1.8 The Molding Parameters and a Recommended Process Development Procedure -- 2 Properties of Polymers and Plastics That Influence Injection Molding -- 2.1 Polymers -- 2.2 Molecular Weight and Molecular Weight Distribution -- 2.3 Polymer Morphology (Crystalline and Amorphous Polymers) -- 2.4 Role of Morphology in Injection Molding -- 2.4.1 Differences in Shrinkage between Amorphous and Crystalline Materials -- 2.4.2 Melt Processing Range -- 2.4.3 Mold Filling Speed -- 2.4.4 Mold Temperatures -- 2.4.5 Barrel Heat Profile -- 2.4.6 Screw Recovery Speeds

Sommario/riassunto

This book offers a comprehensive guide to robust process development and scientific molding in the field of injection molding. Authored by Suhas Kulkarni, a seasoned expert with decades of experience, the text emphasizes a methodical and data-driven approach to optimizing molding processes. It includes updated theories, practical insights, and experimental procedures to improve efficiency and quality in injection molding. The third edition introduces new chapters, such as melt preparation, and enhances previous content with updated figures and methodologies. The book is tailored for professionals in plastics engineering, process development, and manufacturing, as well as students and educators seeking to deepen their understanding of scientific molding principles.