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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Nanomaterials Synthesis Routes -- Catalyst Nanoparticles -- Synthesis and Pre-Synthesis Occurrences -- Vapor-Solid-Liquid (VLS) Growth Mechanism -- Vapor-Solid-Solid (VSS) Growth Mechanism -- Vapor-Solid (VS) Growth Mechanism -- Solution and Supercritical Fluid Based Growth Mechanisms -- Solid-Liquid-Solid (SLS) Growth Mechanism -- Oxide-Assisted Growth (OAG) Mechanism -- Self-Catalytic Growth (SCG) Mechanism -- Vapor-Quasiliquid (Quasisolid)-Solid (VQS) Growth Mechanism -- Catalyst-Mediated VQS Growth Mechanism -- Catalyst-Free VQS Growth Mechanism -- Simple Theoretical Model for VQS Growth Mechanism -- The Universal, Versatile Growth Mechanism -- Conclusions.
Sommario/riassunto	This book deals with the synthesis of nanomaterials with a strong focus on the underlying reaction kinetics and various synthesis mechanisms. It gives a detailed description of all major synthesis routes of many types of novel nanomaterials including nanowires, carbon nanotubes, semiconductor nanotubes, carbon nanobelts, nanofibers, nanorings, nanodots and quantum dots. In addition, it articulates the fundamental mechanisms of nanomaterials synthesis via vapor-phase, liquid-phase and solid-phase processes, highlighting the various strengths and

weaknesses of each mechanism. This monograph provides the reader with a thorough review of the known state-of-the-art, along with a detailed comparison and analysis of all possible nanomaterials synthesis mechanisms. An important element of the book is how to obtain critical knowledge for controlling the morphology of nanomaterials and thereby fine tune their materials properties. The book is an ideal guide for graduate students and researchers new to the field seeking to establish or enhance their understanding of the physical and chemical fundamentals of nanomaterials synthesis mechanisms.