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Sommario/riassunto	This book presents the findings of a major research program investigating structural design and controllable preparation of function-directed crystalline materials. The program was launched by the National Natural Science Foundation of China during the 11th Five-Year Plan period, which was started in October 2008 and concluded at the end of 2016. This book first summarizes the overall scientific objectives and the current state of the art of crystalline materials research in China and the international frontier. It also focuses on exploring the relationships between structures, compositions, and properties of crystalline materials and proposes new mechanisms and models for new materials exploration. In addition, it introduces a new functional-motif theory that can guide the development of crystalline materials with optical, electrical, and other composite functions and presents new research methods for the controlled synthesis and assembly of crystalline materials, and detection and characterization of functional motifs. Furthermore, practical applications for materials such as photoelectric conversion materials, nonlinear optical materials, laser and fluorescent crystal materials, and ferroelectric and microwave dielectric materials have been described. Given its scope, this book is of interest to researchers who work in crystalline materials. It also promotes the multidisciplinary collaboration among chemistry,

materials science, and physics.