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Sommario/riassunto	<p>This book consists of original and review papers which describe basic and applied studies for the modifications of metallic and inorganic materials by using energetic ion/electron beams. When materials are irradiated with energetic charged particles (ions /electrons), their energies are transferred to electrons and atoms in materials, and the lattice structures of the materials are largely changed to metastable or non-thermal-equilibrium states, modifying several physical properties. Such phenomena will engage the interest of researchers as a basic science, and can also be used as promising tools for adding new functionalities to existing materials and for the development of novel materials. The papers in this book cover the ion/electron-beam-induced modifications of several properties (optical, electronic, magnetic, mechanical, and chemical properties) and lattice structures. This book will, therefore, be useful for many scientists and engineers who have been involved in fundamental material science and the industrial applications of metallic and inorganic materials.</p>