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Altri autori (Persone)	CaoGuoqin
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Nota di contenuto	Preface -- A new review of requirements for nuclear reactor cladding materials in extreme environments -- General research progress of diversified material systems for zirconium alloy coatings -- Conventional preparation methods, advantages and bottlenecks of various types of coatings -- Self-reinforcing behavior of zirconium silicon coatings in subcritical water environment -- Self-reinforcing behavior of zircon silicon coatings under irradiation -- The "irradiation-corrosion" correlation mechanism of zirconia coating -- Competitive phase selection and interfacial barrier effect of zircon silicon multilayer films -- Formulation standard and performance analysis of zirconium-silicon amorphous oxide coatings -- Design techniques and protective properties of zirconium-silicon based multi-principal element oxide coatings.
Sommario/riassunto	This book delves into the realm of zirconium alloy coatings, exploring their innovations in research methodologies, and pivotal findings, covering the multidisciplinary field of materials science and surface

engineering. This book offers a detailed analysis of the development, properties, and application prospects of zirconium alloy coatings. Readers will find compelling insights into cutting-edge research methods, innovative findings, and emerging trends in the field. The book elucidates the fundamental principles governing zirconium alloy coatings, highlighting their role in corrosion resistance, high-temperature oxidation resistance, and industrial applications. Notably, it presents a rich array of illustrative figures and tables, enhancing comprehension and facilitating a deeper understanding of the subject matter. This book caters to a wide spectrum of readers, including researchers, engineers, and practitioners in materials science, surface engineering, and metallurgy. It serves as a valuable reference for academia, providing a comprehensive understanding of zirconium alloy coatings and their practical implications across various industries, from aerospace to marine applications.
