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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Chapter 1 Introduction -- Chapter 2 Basic theoretical frameworks for thermo–mechano–chemical coupling in TBCs -- Chapter 3 Nonlinear FEA of TBCs on turbine blades -- Chapter 4 Geometric nonlinearity theory for the interfacial oxidation of TBCs -- Chapter 5 Physically nonlinear coupling growth and damage caused by interfacial oxidation in TBCs -- Chapter 6 Thermo–mechano–chemical coupling during CMAS corrosion in TBCs -- Chapter 7 Erosion failure mechanisms of TBCs -- Chapter 8 Basic mechanical properties of TBCs and their characterization.
Sommario/riassunto	This book highlights the failure theories and evaluation techniques of thermal barrier coatings, covering the thermal-mechanical–chemical coupling theories, performance and damage characterization techniques, and related evaluations. Thermal barrier coatings are the

key thermal protection materials for high-temperature components in advanced aeroengines. Coating spallation is a major technical bottleneck faced by researchers. The extremely complex microstructure, diverse service environments, and failure behaviors bring challenges to the spallation analysis in terms of the selective use of mechanical theories, experimental methods, and testing platforms. In the book, the authors provide a systematic summary of the latest research and technological advances and present their insights and findings in the past couple of decades. This book is not only suitable for researchers and engineers in thermal barrier coatings and related fields but also a good reference for upper-undergraduate and postgraduate students of materials science and mechanics majors.

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