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Sommario/riassunto	This book addresses the recent trends in thermal and environmental barrier coatings and their applications in extreme environments. It introduces the state of the art in coating materials and processes for high and ultrahigh-temperature environments and identifies areas for

improvement in materials selection, performance upgrades, design considerations, and manufacturing methods. This book also covers fundamental studies involving modelling, creating coating architectures, coating preparation methods, and coating capability throughout a wide temperature range. The book examines a variety of high-temperature coatings prepared through various synthesis processes such as thermal spraying, electron beam evaporation, and sol–gel methods. This book also covers ultrahigh-temperature ceramic (UHTC) materials and provides a brief overview of the synthesis method, densification processes, and coating methods along with the properties and applications of emerging high entropy UHTCs. With contributions from international researchers active in the field, this edited book features the most recent and up-to-date literature references for a broad readership consisting of academic and industrial professionals. It is suitable for graduate students as well as materials scientists and engineers working in the area of high and ultrahigh-temperature ceramic materials.