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Sommario/riassunto	"In the last few decades, significant progress has been made in developing in-depth understanding of high strain-rate behavior of ceramic materials. The widespread use of ceramics for a variety of civilian and military applications, for example, in blast protection for armored vehicles, lightweight protective armor for soldiers etc., has invigorated new research directions in this field. The scientific discussions presented here are also applicable to a range of civilian applications including high-speed machining, cutting, and grinding of brittle materials. The book is organized into eight chapters as detailed in the following: Chapter 1 provides a brief history of ceramic materials, early approach to understanding their mechanical behavior, and motivation for studying their dynamic response. Chapter 2 focuses on experimental methods frequently deployed for assessing high strain-rate deformation and failure in brittle solids. Chapter 3 illustrates the overarching example problem of projectile impact on a confined ceramic target, which presents the complex sequence of events and mechanisms (e.g. shock propagation, dynamic fracture, fragmentation and comminution, phase transformation) central to the

in-depth understanding of dynamic behavior of ceramic materials. Chapter 4 presents a broad review of experimental, analytical and computational efforts currently available in the literature on dynamic constitutive behavior of intact and damaged ceramics. Chapter 5 discusses shock response of brittle materials at strain rates in the range of 10^5 s^{-1} and beyond. Chapter 6 describes dynamic deformation behavior of a unique class of advanced structural ceramics called icosahedral ceramics (e.g., B_4C , B_6O and BAM materials); ceramics which possess high hardness, second only to diamond-like structural solids. Chapter 7 focusses on dynamic behavior of a variety of transparent materials including chemically strengthened glass and glass ceramics (single crystal sapphire, spinels, AlON). Finally, chapter 8 presents emerging directions as well as challenges in experimental and computational domains with particular emphasis on dynamic behavior of ultrahard ceramics."--
