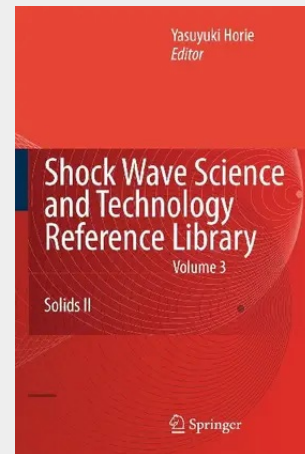


Shock Wave Science and Technology Reference Library, Vol. 3

Solids II

This book is the second volume of Solids Volumes in the Shock Wave Science and Technology Reference Library. These volumes are primarily concerned with high-pressure shock waves in solid media, including detonation and high-velocity impact and penetration events. This volume contains four articles. The first two describe the reactive behavior of condensed-phase explosives, and the remaining two discuss the inert, mechanical response of solid materials. The articles are each self-contained, and can be read independently of each other. They offer a timely reference, for beginners as well as professional scientists and engineers, covering the foundations and the latest progress, and include burgeoning development as well as challenging unsolved problems. The first chapter, by S. Shefel'd and R. Engelke, discusses the shock initiation and detonation phenomena of solids explosives. The article is an outgrowth of two previous review articles: "Explosives" in vol. 6 of Encyclopedia of Applied Physics (VCH, 1993) and "Initiation and Propagation of Detonation in Condensed-Phase High Explosives" in High-Pressure Shock Compression of Solids III (Springer, 1998). This article is not only an up-to-date review, but also offers a concise heuristic introduction to shock waves and condensed-phase detonation. The authors emphasize the point that detonation is not an uncontrollable, chaotic event, but that it is an orderly event that is governed by and is describable in terms of the conservation of mass, momentum, energy and certain material-specific properties of the explosive.

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