

[DOWNLOAD](#)

## Static Compression of Energetic Materials

By Suhithi M. Peiris

Springer Berlin Heidelberg Dez 2008, 2008. Buch. Condition: Neu. Neuware - Developing and testing novel energetic materials is an expanding branch of the materials sciences. Reaction, detonation or explosion of such materials invariably produce extremely high pressures and temperatures. To study the equations-of-state (EOS) of energetic materials in extreme regimes both shock and static high pressure studies are required. The present volume is an introduction and review of theoretical, experimental and numerical aspects of static compression of such materials. Chapter 1 introduces the basic experimental tool, the diamond anvil pressure cell and the observational techniques used with it such as optical microscopy, infrared spectrometry and x-ray diffraction. Chapter 2 outlines the principles of high-nitrogen energetic materials synthesis. Chapters 3 and 4, examine and compare various EOS formalisms and data fitting for crystalline and non-crystalline materials, respectively. Chapter 5 details the reaction kinetics of detonating energetic materials. Chapter 6 investigates the interplay between static and dynamic (shock) studies. Finally, Chapters 7 and 8 introduce numerical simulations: molecular dynamics of energetic materials under either hydrostatic or uni-axial stress and ab-initio treatments of defects in crystalline materials. This timely volume meets the growing demand for a state-of-the-art introduction and review of the...



[READ ONLINE](#)  
[ 2.68 MB ]

### Reviews

*The most effective book i ever read through. it had been writtern quite flawlessly and valuable. I am just happy to let you know that here is the very best publication i have got read through during my individual daily life and may be he greatest pdf for ever.*

-- Prof. Adonis Rodriguez

*Comprehensive information for publication fans. I have got read and i am confident that i am going to likely to go through once again once again in the foreseeable future. I am just very happy to let you know that this is actually the greatest book i have read in my very own existence and could be he finest book for at any time.*

-- Clair Windler