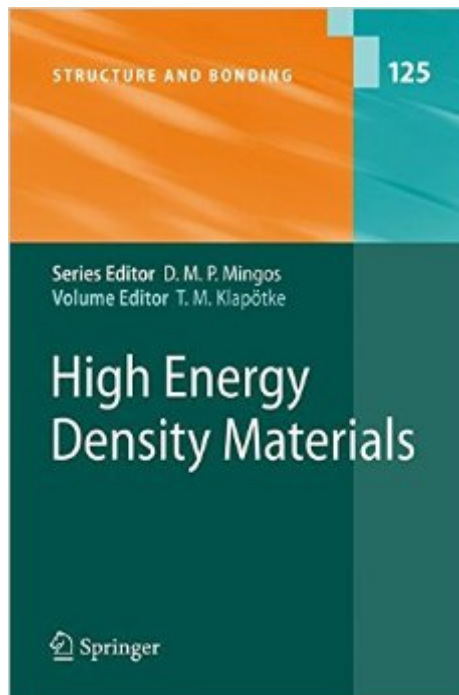


The book was found

High Energy Density Materials (Structure And Bonding)



Synopsis

This book summarizes some recent developments in the area of high-energy high-density (HEDM) materials. Rather than being comprehensive in scope, emphasis is given to structural and bonding features of highly energetic materials with possible applications as high explosives (secondary explosives) or propellants. In this book we do not focus on primary explosives (e.g. lead azide replacements) since by definition the explosive performance (detonation velocity and detonation pressure) of such materials - although very sensitive - are much less energetic than secondary (high) explosives. Modern HEDMs derive most of their energy (i) from oxidation of the carbon backbone, as in traditional energetic materials, (ii) from ring or cage strain, or (iii) from their very high positive heat of formation. Examples of the first class are traditional explosives, such as TNT, RDX and HMX. Modern nitro-compounds, such as CL-20 or the recently reported hepta- and octa-trocubanes, belong to the second group of explosives and possess very high densities and enhance the energies utilizing substantial cage strain. Members of the third class of compounds are high-nitrogen compounds (up to 85% nitrogen content), such as aminotetrazole and nitrotetrazole derivatives, which show the desired remarkable insensitivity to electrostatic discharge, friction and impact, while having very high positive heats of formation and therefore very high explosive powers. The synthesis of energetic, non-nuclear materials for military application has been a long-term goal in various academic and military research groups worldwide. Some of the current challenges that face HEDM scientists are: Demand for environmentally compatible and toxicologically acceptable explosives and propellants. Examples are replacements for TNT, RDX and HMX since nitro-explosives per se, as well as their environmental transformation products, are toxic.

Book Information

Series: Structure and Bonding (Book 125)

Hardcover: 286 pages

Publisher: Springer; 2007 edition (August 24, 2007)

Language: English

ISBN-10: 3540722017

ISBN-13: 978-3540722014

Product Dimensions: 6.1 x 0.7 x 9.2 inches

Shipping Weight: 1.4 pounds (View shipping rates and policies)

Average Customer Review: Be the first to review this item

Best Sellers Rank: #9,569,940 in Books (See Top 100 in Books) #62 in Books > Science & Math

> Chemistry > Organic > Heterocyclic #2826 inÂ Books > Science & Math > Chemistry > Inorganic #7467 inÂ Books > Medical Books > Medicine > Internal Medicine > Pathology > Clinical Chemistry

[Download to continue reading...](#)

High Energy Density Materials (Structure and Bonding) Osteoporosis: How To Reverse Osteoporosis, Build Bone Density And Regain Your Life (Osteoporosis, Bone Density, Strong Bones, Healthy Bones, Osteoporosis Cure) Structure and Bonding in Crystalline Materials Reiki: The Healing Energy of Reiki - Beginner's Guide for Reiki Energy and Spiritual Healing: Reiki: Easy and Simple Energy Healing Techniques Using the ... Energy Healing for Beginners Book 1) High Blood Pressure Cure: How To Lower Blood Pressure Naturally in 30 Days (Alternative Medicine, Natural Cures, Natural Remedies, High Blood Pressure ... Cures for High Blood Pressure, High Bl) Fault-Tolerance and Reliability Techniques for High-Density Random-Access Memories (Prentice Hall Modern Semiconductor Design Series) The Structure of Materials (Mit Series in Materials Science and Engineering) Super Power Breathing: For Super Energy, High Health & Longevity (Bragg Super Power Breathing for Super Energy) The Glycemic Load Diet Guide: With High Fiber: High Protein: Complex Carbs: Low Gi Weight Watcher Point + Nutritious Recipes: Lose Weight Not Energy Polypropylene Structure, blends and composites: Volume 1 Structure and Morphology Advanced Organic Chemistry: Part A: Structure and Mechanisms: Structure and Mechanisms Pt. A Bonding and the Case for Permanence: Preventing mental illness, crime, and homelessness among children in foster care and adoption. A guide for attorneys, judges, therapists and child welfare. 500 High Fiber Recipes: Fight Diabetes, High Cholesterol, High Blood Pressure, and Irritable Bowel Syndrome with Delicious Meals That Fill You Up and Help You Shed Pounds! Bonding with Your Rescue Dog: Decoding and Influencing Dog Behavior (Dog Training and Dog Care Series Book 1) Symmetry in Bonding and Spectra: An Introduction Valency and Bonding: A Natural Bond Orbital Donor-Acceptor Perspective Foods High in Fiber Cookbook: List of High Fiber Foods for a Healthy Lifestyle - Recipes for High Fiber Foods Bonding with Your Child through Boundaries 7 Steps to Bonding with Your Stepchild Organotransition Metal Chemistry: From Bonding to Catalysis

[Dmca](#)