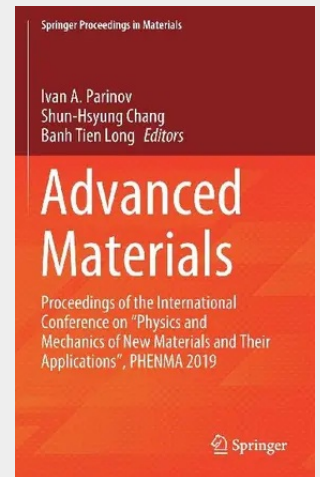


Advanced Materials

Proceedings of the International Conference on "Physics and Mechanics of New Materials and Their Applications", PHENMA 2019

This book presents selected peer-reviewed contributions from the 2019 International Conference on "Physics and Mechanics of New Materials and Their Applications", PHENMA 2019 (Hanoi, Vietnam, 7–10 November, 2019), divided into four scientific themes: processing techniques, physics, mechanics, and applications of advanced materials. The book describes a broad spectrum of promising nanostructures, crystals, materials and composites with special properties. It presents nanotechnology approaches, modern environmentally friendly techniques and physical-chemical and mechanical studies of the structural-sensitive and physical-mechanical properties of materials. The obtained results are based on new achievements in material sciences and computational approaches, methods and algorithms (in particular, finite-element and finite-difference modeling) applied to the solution of different technological, mechanical and physical problems. The obtained results have a significant interest for theory, modeling and test of advanced materials. Other results are devoted to promising devices demonstrating high accuracy, longevity and new opportunities to work effectively under critical temperatures and high pressures, in aggressive media, etc. These devices demonstrate improved comparative characteristics, caused by developed materials and composites, allowing investigation of physio-mechanical processes and phenomena based on scientific and technological progress.

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