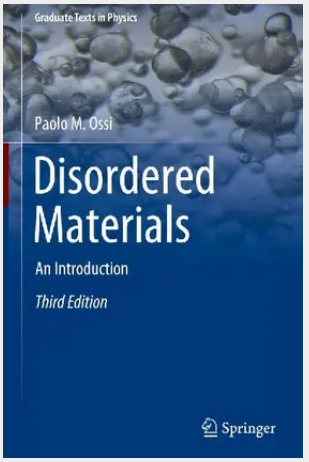
Ossi

Disordered Materials

An Introduction



This self-contained textbook takes readers on a comprehensive journey through the intricate realm of physics in structurally disordered condensed materials. Tailored for advanced undergraduate and graduate students, this book unfolds the complexities step by step.

In this updated and enlarged 3rd edition, fundamental building blocks serve as the foundation for constructing structural models of disordered solids, delving into their geometry and symmetry. The scope of the book encompasses the phenomenology and various models of the glass transition, elucidating the characteristics of bulk metallic glasses. Structural analysis techniques for amorphous solids, the role of atomic clusters in structure evolution, quasicrystals, nanometer-sized disordered solids, cluster-assembled materials, and the synthesis and assembly of nanoparticles are explored.

The text also navigates through the intricacies of transport and localization in heavily disordered materials, offering insights into controlled growth of thin films. Throughout, the narrative is enriched with references to recent and pertinent results, both experimental and theoretical, providing readers with a gateway to the latest and most dynamic research areas in the field.

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