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3.1.9 Ball-to-powder weight ratio3.1.10 Milling temperature; References; 4 Ball milling as a powerful nanotechnological tool for fabrication of nanomaterials; 4.1 Introduction; 4.1.1 Methods used in the preparation of nanomaterials; 4.2 Nanocrystalline materials; 4.2.1 Influence of nanocrystallinity on mechanical properties: strengthening by grain size reduction; 4.3 Formation of nanocrystalline materials by ball-milling technique; 4.3.1 Mechanism; 4.3.1.1 First stage; 4.3.1.2 Second stage; 4.3.1.3 Third stage; 4.3.2 Selected examples
5 Mechanically induced solid state carbonization

Sommario/riassunto

This book is a detailed introduction to mechanical alloying, offering guidelines on the necessary equipment and facilities needed to carry out the process and giving a fundamental background to the reactions taking place. El-Eskandarany, a leading authority on mechanical alloying, discusses the mechanism of powder consolidations using different powder compaction processes. A new chapter will also be included on thermal, mechanically-induced and electrical discharge-assisted mechanical milling. Fully updated to cover recent developments in the field, this second edition also introduces new a