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Nota di contenuto	Chapter1: Introduction -- Chapter2: Resistance sintering -- Chapter3: Sintering by high-voltage electric pulses during high-voltage consolidation -- Chapter4: Sintering by low-voltage electric pulses (including Spark Plasma Sintering, SPS) -- Chapter5: Flash sintering -- Chapter6: Sintering in electric field in non-contact mode and in external magnetic field -- Chapter7: Microwave sintering -- Chapter8: Induction heating sintering -- Chapter9: Magnetic pulse compaction (MPC) -- Chapter10: Field effects on multi-component and reacting systems -- Chapter11: Other field-assisted sintering techniques.
Sommario/riassunto	This book represents the first ever scientific monograph including an in-depth analysis of all major field-assisted sintering techniques. Until now, the electromagnetic field-assisted technologies of materials processing were lacking a systematic and generalized description in one fundamental publication; this work promotes the development of generalized concepts and of comparative analyses in this emerging area of materials fabrication. This book describes modern technologies for the powder processing-based fabrication of advanced materials.

New approaches for the development of well-tailored and stable structures are thoroughly discussed. Since the potential of traditional thermo-mechanical methods of material treatment is limited due to inadequate control during processing, the book addresses ways to more accurately control the resultant material's structure and properties by an assisting application of electro-magnetic fields. The book describes resistance sintering, high-voltage consolidation, sintering by low-voltage electric pulses (including spark plasma sintering), flash sintering, microwave sintering, induction heating sintering, magnetic pulse compaction and other field-assisted sintering techniques. Includes an in-depth analysis of all major field-assisted sintering techniques; Explains new techniques and approaches for material treatment; Provides detailed descriptions of spark plasma sintering, microwave sintering, high-voltage consolidation, magnetic pulse compaction, and various other approaches when field-assisted treatment is applied.

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