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Nota di contenuto	Part 1: Metals -- 1. Microstructure and strength properties of the Mg-Zn-Ca-Er alloy produced by spark plasma sintering (SPS) method -- Part 2: Composites -- 2. Coir and Hop fibres: Tensile characterization and comparison between fibres from distinct climates -- 3. Simulation strategies for dynamic and static behaviour of composite beams -- 4. The design of a cementitious material modified with the synergistic addition of sodium silicate and fine aggregate sourced from granite waste in order to obtain a mortar with low capillary suction -- 5. The production process of foamed geopolymers with the use of various foaming agents -- Part 3: Additive manufacturing -- 6. Mechanical and physical characterization of parts manufactured by 3D printing -- 7. Potential use of sugarcane bagasse ash in cementitious mortars for 3D printing -- Part 4:Design -- 8. Experimental bench for the analysis of belt deformation in belt-pulley systems by Digital Image Correlation -- Part 5: Forming -- 9. The effect of rubberhardness on the channel

depth of the metallic bipolar plates fabricated by rubber pad forming -- Part 6: Joining -- 10. Numerical investigation of the influence of a movable die base on joint formation in semi-tubular self-piercing riveting -- 11. Finite element analysis to determine pullout strength of fixation around large defect site in femur reconstruction surgery. . .

Sommario/riassunto

This book offers selected contributions on fundamental research and application in designing and engineering materials. It focuses on mechanical engineering applications such as automobile, railway, marine, aerospace, biomedical, pressure vessel technology, turbine technology. This includes a wide range of material classes, like lightweight metallic materials, polymers, composites, and ceramics. Advanced applications include manufacturing using the new or newer materials, testing methods, multi-scale experimental and computational aspects.