Record Nr. UNINA9910818795803321 Autore Coussy Olivier Titolo Mechanics and physics of porous solids / / Olivier Coussy Chichester, West Sussex, U.K.; ; Hoboken, N.J., : Wiley, 2010 Pubbl/distr/stampa **ISBN** 1-119-95616-1 1-282-68776-X 9786612687761 0-470-71038-1 0-470-71039-X Edizione [1st ed.] 1 online resource (297 p.) Descrizione fisica Disciplina 620.1/16 Soggetti Porous materials **Physics** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto MECHANICS AND PHYSICS OF POROUS SOLIDS; Contents; Preface; 1 The Strange World of Porous Solids; 2 Fluid Mixtures; 3 The Deformable Porous Solid; 4 The Saturated Poroelastic Solid; 5 Fluid Transport and Deformation: 6 Surface Energy and Capillarity: 7 The Unsaturated Poroelastic Solid: 8 Unconfined Phase Transition: 9 Phase Transition in Porous Solids; 10 The Poroplastic Solid; 11 By Way of Conclusion; Further Reading; Index Sommario/riassunto Mechanics and Physics of Porous Solids addresses the mechanics and physics of deformable porous materials whose porous space is filled by one or several fluid mixtures interacting with the solid matrix. Coussy uses the language of thermodynamics to frame the discussion of this topic and bridge the gap between physicists and engineers, and organises the material in such a way that individual phases are explored, followed by coupled problems of increasing complexity. This structure allows the reader to build a solid understanding of the physical processes occurring in the fluids and then porous