Record Nr. UNINA9910828203803321 Autore Daian Jean-Francois **Titolo** Equilibrium and transfer in porous media 2: transfer laws // Jean-Francois Daian Pubbl/distr/stampa London; ; Hoboken, New Jersey:,: ISTE:,: Wiley,, 2014 ©2014 **ISBN** 1-118-93126-2 1-118-93125-4 1-118-93127-0 Edizione [1st ed.] Descrizione fisica 1 online resource (230 p.) Collana Civil Engineering and Geomechanics Series Disciplina 620.116 Soggetti Porous materials Porous materials - Fluid dynamics Porous materials - Permeability Transport theory - Porous material 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 Cover; Title Page; Contents; Nomenclature; Chapter 1. Transport and Transfer: from Homogeneous Phases to Porous Media; 1.1. Transfer phenomena: complementary approaches; 1.1.1. Transfer processes and couplings; 1.1.2. Continuums and molecular aspect; 1.2. Usual formulations for homogeneous phases; 1.2.1. FLOW of a viscous fluid; 1.2.2. Isothermal diffusion; 1.2.3. Thermal conduction. Fourier's law; 1.3. Transfers in porous media, macroscopization; 1.3.1. General approach of macroscopization: 1.3.2. Fundamental concepts of macroscopization: 1.3.3. Conditions of validity of macroscopization 1.3.4. Obtaining the macroscopic transfer laws1.4. Porous media: elementary balances and transfer laws; 1.4.1. Rules of play; 1.4.2. Filtration of a fluid saturating the pore space: Darcy's law; 1.4.3. Isothermal molecular diffusion in the gaseous or liquid phase saturating the pore space; 1.4.4. Thermal conduction in a composite medium; 1.5. Appendices; 1.5.1. Mechanics and thermodynamics of

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Sommario/riassunto

A porous medium is composed of a solid matrix and its geometrical complement: the pore space. This pore space can be occupied by one or more fluids. The understanding of transport phenomena in porous media is a challenging intellectual task. This book provides a detailed analysis of the aspects required for the understanding of many experimental techniques in the field of porous media transport phenomena. It is aimed at studentsor engineers who may not be looking specifically to become theoreticians in porous media, but wish to integrate knowledge of porous media with t