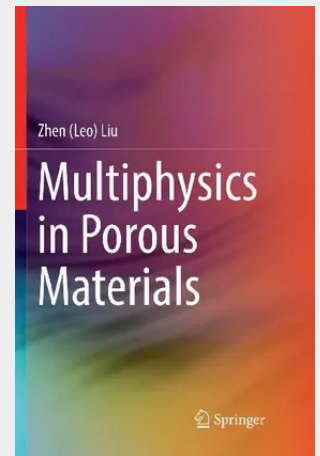


Multiphysics in Porous Materials

This book summarizes, defines, and contextualizes multiphysics with an emphasis on porous materials. It covers various essential aspects of multiphysics, from history, definition, and scope to mathematical theories, physical mechanisms, and numerical implementations. The emphasis on porous materials maximizes readers' understanding as these substances are abundant in nature and a common breeding ground of multiphysical phenomena, especially complicated multiphysics. Dr. Liu's lucid and easy-to-follow presentation serve as a blueprint on the use of multiphysics as a leading edge technique for computer modeling. The contents are organized to facilitate the transition from familiar, monolithic physics such as heat transfer and pore water movement to state-of-the-art applications involving multiphysics, including poroelasticity, thermohydro-mechanical processes, electrokinetics, electromagnetics, fluid dynamics, fluid structure interaction, and electromagnetomechanics. This volume serves as both a general reference and specific treatise for various scientific and engineering disciplines involving multiphysics simulation and porous materials.

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