1. Record Nr. UNINA9910163142903321 Autore Dixon John M Titolo Mixed Convection in Fluid Superposed Porous Layers / / by John M. Dixon, Francis A. Kulacki Pubbl/distr/stampa Cham:,: Springer International Publishing:,: Imprint: Springer,, 2017 **ISBN** 3-319-50787-7 Edizione [1st ed. 2017.] Descrizione fisica 1 online resource (X, 72 p. 40 illus.) Collana SpringerBriefs in Thermal Engineering and Applied Science, , 2193-2530 Disciplina 621.4022 Soggetti Thermodynamics Heat engineering Heat transfer Mass transfer Fluid mechanics Engineering—Materials Materials science Engineering Thermodynamics, Heat and Mass Transfer **Engineering Fluid Dynamics** Materials Engineering Characterization and Evaluation of Materials Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di bibliografia Includes bibliographical references and index. Introduction -- Mathematical Formulation and Numerical Methods --Nota di contenuto Numerical Results -- Measurement of Heat Transfer Coefficients --Summary of Findings -- References -- Appendices. Sommario/riassunto This Brief describes and analyzes flow and heat transport over a liquidsaturated porous bed. The porous bed is saturated by a liquid layer and heating takes place from a section of the bottom. The effect on flow patterns of heating from the bottom is shown by calculation, and when the heating is sufficiently strong, the flow is affected through the porous and upper liquid layers. Measurements of the heat transfer rate from the heated section confirm calculations. General heat transfer

laws are developed for varying porous bed depths for applications to

process industry needs, environmental sciences, and materials processing. Addressing a topic of considerable interest to the research community, the brief features an up-to-date literature review of mixed convection energy transport in fluid superposed porous layers.