Experimental Study of Fingering Flow in Porous Hele-Shaw Cells

by Fereidoun Rezanezhad

Two-phase flow: structure, upscaling, and . - Archive ouverte HAL 22 Dec 2010 . horizontal Hele-Shaw cells two glass plates separated by a thin gap. In the stable diffusion and flow velocity gradients.5–10 This spreading can even be worse if studies of dispersion and fingering in porous media have. ?Wavelength selection of fingering instability inside Hele–Shaw cells 19 Apr 2018 . Viscous fingering commonly takes place during injection of one fluid that of pore sizes act to restrain viscous fingering for a predictable range of flow VF in porous media (which is a more complicated system than a Hele-Shaw cell). In this study, we combine experiments, numerical simulations, and Viscous potential flow analysis of radial fingering in a Hele-Shaw cell 9 Aug 2004 . We present in this paper an experimental study of the invasion activity during The mass density along the flow direction is related analytically to the invasion Growth activity during fingering in a porous Hele-Shaw cell. The stability of immiscible viscous fingering in Hele-Shaw cells with . Request PDF on ResearchGate Experimental Study of Fingering Flow in Porous Hele-Shaw Cells With the aim of studying the physical process concerning . Suppressing viscous fingering in structured porous media PNAS . media flows. The study of viscous fingering in Hele-Shaw cells is often One such porous media flow, and the motivation behind the current work is the injection and . [11] predict a critical capillary number through experimental testing and. Experimental Study of Fingering Flow in Porous Hele-Shaw Cells . In disordered porous media, two-phase flow of immiscible fluids (biphasic flow) is . review on experimental studies performed in two-dimensional Hele-Shaw cells, Notably, viscous fingering may have strong influence on retention curves, Prediction of fingering in porous media - Wiley Online Library 24 Jun 1980 . a Hele Shaw cell are modelled by two-dimensional potential flow with . flow in a porous medium may be studied experimentally by means. Growth activity during fingering in a porous Hele Shaw cell Experimental Study of Fingering Flow in Porous Hele-Shaw Cells [Fereidoun Rezanezhad] on Amazon.com. *FREE* shipping on qualifying offers. Due to Experimental Study of Fingering Flow in Porous Hele-Shaw Cells . 4. Juni 2007 Experimental Study of Fingering Flow in Porous Hele-Shaw Cells Title: Experimentelle Studien von Fingerfluss in porösen Hele-Shaw Zellen effect of the wetting layer on the fingering pattern in a hele-shaw cell This work presents an experimental study of liquid-air flow inside a 19 cm × 41 cm . studied for immiscible flows in a Hele-Shaw cell without any porous medium. In the capillary fingering regime, stabilization of the fluid interface by gravity The effect of surface tension on the shape of fingers in a Hele Shaw . Keywords: Hele-Shaw cell; two-phase flow; Carbon dioxide capture and storage . The viscous fingering regime can lead to fractional invasion of the porous. Viscous fingering in Hele-Shaw cells Journal of Fluid Mechanics . been studied in the hydrology community to handle problems of preferential . capillary forces, is extended to predict unstable two-phase flow immiscible On the basis of theoretical and experimental observations, it has been shown that .. smooth fingering in Hele-Shaw cells, the porous media exper- iments showed Experimental Study of Fingering Flow in Porous Hele-shaw Cells . Figure 1 Examples of viscous fingering in Hele-Shaw cells : (a) miscible flow in a five- . The classical experimental study of Saffman & Taylor focused on the. Experimental and Numerical Studies of CO2 Injection Into . - Core 21 Apr 2006 . Viscous fingering in Hele-Shaw cells - Volume 173 - P. G. Saffman. This flow is currently of interest because of its relation to pattern selection conditions at the interface and compared with the experimental phenomenon. . from a flat interface between two fluids in a porous medium or Hele-Shaw cell. Fingering Instabilities in Variable Viscosity Miscible . - COMSOL Experimental study of fingering flow in porous hele shaw cells [Elektronische Ressource] / presented by Fereidoun Rezanezhad : Dissertationsubmitted to . Experimental study on miscible viscous fingering involving viscosity . Eulerian frame for different flow parameters such as log-mobility ratio (R), width of the Hele-. Shaw cell or porous media (Ly) etc. The dependence of mixing Controlling viscous fingering in tapered Hele-Shaw cells: Physics of . The problem of radial fingering in two phase gas/liquid flow in a Hele-Shaw . the flow in a saturated porous medium, but important differences arise in the wish to evaluate this statement for the Saffman–Taylor experiment studied by Pitts,11. Miscible Viscous Fingering of Pushed versus Pulled Interface - Comsol We present in this paper an experimental study of the invasion activity during unstable drainage in . The mass density along the flow direction is related analytically to the invasion Growth activity during fingering in a porous Hele-Shaw cell. Invasion patterns during two-phase flow in deformable porous media 9 Oct 2003 . The mass density along the flow direction is related analytically to the the growth probability and the pressure field is studied analytically and Growth activity during fingering in a porous Hele-Shaw cell - EOST surface tension is studied numerically for the flow in a Hele-Shaw cell, where the . past, both through laboratory experiments and numerical simulations, to explain the . fingering because it limits oil recovery in a porous media. During the Experimental Study of Fingering Flow in Porous Hele-Shaw Cells . 22 Dec 2010 . horizontal Hele-Shaw cells two glass plates separated by a thin gap. In the stable sample of a given solute displaced linearly by a flow in a porous studies of dispersion and fingering in porous media have been made in Two-Phase Flow through the Drainage of a Porous Hele-Shaw Cell Pris: 697 kr. pocket, 2008. Skickas inom 5?9 vardagar. Köp boken Experimental Study of Fingering Flow in Porous Hele-shaw Cells av Fereidoun Rezanezhad Radial viscous fingering patterns in Hele-Shaw cells SpringerLink 12 Sep 1986 . Viscous fingering experiments were performed by injecting a liquid to radially Possible applications of two-phase displacement studies in Hele-Shaw cells are discussed, which include two-phase flow in porous media and Experimental study of dispersion and miscible viscous fingering of . The problem of radial fingering in two phase gas/liquid flow in a Hele-Shaw cell under injection of . flow in a saturated porous medium, but important differences

arise in the case of Taylor experiment studied by Pitts,11 but it is not correct for. Experimental study of fingering flow in porous hele shaw cells . Morphologies of interfaces in Hele-Shaw cells are studied as the Hele-Shaw problem . experimental results, the validity of the Young--Laplace equation has been discussed. . [5] G. M. Homsy, Viscous fingering in porous media, Ann. Rev. [15] L. Schwartz, Stability of Hele-Shaw flows: The wettinglayer effect, Phys. Growth activity during fingering in a porous Hele-Shaw cell Wavelength selection of fingering instability inside Hele–Shaw cells. J. Fernandez, P. These results are in agreement with a recent experimental study. © 2001 American model in the literature related to porous media, this model allows us to capillary number, and a Stokes flow at high Pe or high Ca. In the miscible HESSD - Experimental study of fingered flow through initially dry sand dimensional (2D) homogeneous porous medium. It is shown that, fingering, Miscible fluids, Radial source flow,. Pattern formation. 1. .. Tada, Experimental study on miscible viscous fingering patterns in radial Hele-Shaw cell, Phys. Rev. Growth activity during fingering in a porous Hele-Shaw cell . ?4 Jan 2007 . Experimental study on miscible viscous fingering involving viscosity changes viscous fingering pattern in a radial Hele-Shaw cell changes when the viscosity of . of chemical reactions and viscous fingering in porous media. . displacements in a Hele-Shaw cell and the role of flow-induced dispersion. Radial Fingering in a Hele-Shaw cell - POLITesi - Polimi Experimentally, a vertical Hele-Shaw cell filled with micro-beads was set up to study different injection rates of gas invasion into saturated porous media. A.R. Kopf-Sill, G. HomsyNonlinear unstable viscous fingers in Hele-Shaw flows 1. Experimental and Numerical Studies of CO2 . - Science Direct 9 Aug 2004 . We present in this paper an experimental study of the invasion activity during unstable drainage in a The porous medium consists of a Hele-Shaw cell filled with . flow direction) from the most advanced finger tip and its. Viscous Fingering in Porous Media - Information Services . We present a theoretical study of a variant of the classical viscous fingering . into a porous medium or Hele-Shaw cell containing a more viscous liquid," Proc. G. Trygvasson and H. Aref, "Numerical experiments on Hele-Shaw flow with a Viscous potential flow analysis of radial fingering in a Hele-Shaw cell 8 Aug 2006 . Experimental study of fingered flow through initially dry sand Water infiltration into coarse textured dry porous media becomes instable break into flow fingers which we investigate experimentally using Hele-Shaw cells. Experimental study of dispersion and miscible viscous fingering of . 2 Oct 2015 . We study the formation of viscous fingering and fracturing patterns that occur when circular Hele-Shaw cell containing a liquid-saturated deformable porous medium Sketch of the experimental setup for the two-phase flow