

Abstract Submitted  
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**Two-phase flows of immiscible fluids in porous media** GUILLAUME DEGRE, MIKAEL HERBERT, LOF, unité mixte CNRS - Rhodia - Bordeaux-1 (Pessac, FRANCE), MIKEL MORVAN, RHODIA (Aubervilliers, FRANCE), MATHIEU JOANICOT, ANNIE COLIN, LOF, unité mixte CNRS - Rhodia - Bordeaux-1 (Pessac, FRANCE) — This paper describes an experimental work on the study of two-phase flow in porous media. We investigate both drainage and imbibition experiments where microscopic phenomena are rather different due to changes in wettability properties of the fluids with respect to the surface. Capillary trapping (ganglions formation) may occur in imbibition experiments whereas in drainage experiments the wetting fluid that initially fills the porous media can be drained along the surface. On both cases, we measure the residual saturation as a function of the capillary number and study the influence of the viscosity ratio. This parameter plays a less important role on the displacement pattern in drainage experiments than in imbibition experiments. The comprehension of those phenomena is of great interest for Enhanced Oil Recovery (EOR) application.

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