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Experimental study on effects of effective interfacial tension on miscible viscous fingering FU WEI QUAH, YU QI, YUICHIRO NAGATSU, Department of Chemical Engineering, Tokyo University of Agriculture and Technology — We experimentally investigate effects of effective interfacial tension (EIT) on miscible viscous fingering (VF). To do so, we prepare two miscible liquid systems in which the viscosity contrast between the more- and less viscous liquids is the same but the EIT between the two liquids is different. We confirm that the viscosity is the same in both the systems but EIT is different by means of the measurements of viscosity and EIT. We perform VF experiment by using a Hele-Shaw cell. We find that the typical width of the fingers is larger in the system involving larger EIT. This experimental result has a good agreement with recent numerical studies of the related issue.

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