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**Viscoelasticity measurement of gel formed at the liquid-liquid reactive interfaces** TOMOHIRO UJIE, YUTAKA TADA, SHUICHI IWATA, YOSHIHITO KATO, Nagoya Institute of Technology, YUICHIRO NAGATSU, Tokyo University of Agriculture and Technology — We have experimentally studied a reacting liquid flow with gel formation by using viscous fingering (VF) as a flow field. Here, two systems were employed. In one system, sodium polyacrylate (SPA) solution and ferric ion solution were used as the more and less viscous liquids, respectively. In another system, xthantan gum (XG) solution and the ferric ion solution were used as the more and less viscous liquids, respectively. We showed that influence of gel formation on VF were qualitatively different in these two systems. We consider that the difference in the two systems will be caused by the difference in the properties of the gels. Therefore, we have measured the rheological properties of the gels by means of a rheometer. In the present study, viscoelasticity measurement was performed by two methods. One is the method which uses Double Wall Ring sensor (TA instrument) and another is the method using parallel plate. In both viscoelasticity measurements, the behavior of the formed gel was qualitatively consistent. We have found that the gel in the SPA system shows viscoelastic fluid like behavior. Moreover, we have found that the gel in the XG system shows solid like behavior.

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