

### Contact line motion of PAAm solution in glycerin inside horizontal glass capillary

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In this research, we investigated the contact line motion of polyacrylamide(PAAm) solutions in glycerin inside horizontal glass capillaries. PAAm polymers with two different molecular weights of 100,000 g/mole (100k) and 5,000,000 g/mole (5M) were used.

The polymer migration theory predicts that, in the case of 5M solutions, the contact line speed should be strongly affected by the migration of polymers from the contact line region to the bulk, while in the case of 100k PAAm solutions, the contact line motion is not affected by the migration. The experimental data confirmed the theoretical predictions. The positive first normal stress difference ( $N_1$ ) of 100k polymer solutions also affects the contact line speed.  $N_1$  of 5M PAAm solutions does not appear to be significant because polymers are almost depleted near the contact line due to migration.