Modeling of polymer membrane formation

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In this talk we present recent results of the subproject A.6. A part of the project is dedicated to morphology evolution in the preparation process of polymer membranes. We present recent experimental and numerical results that indicate viscous fingering as one possible mechanism for structure formation. This is the first time that viscous fingering is investigated using the Smoothed Particle Hydrodynamics (SPH) method. We analyze the characteristics found in simulations and compare them to characteristics found in the experiments to demonstrate agreement. It will turn out that viscous fingering is only important in the preparation of flat sheet membranes but less important for capillary membranes.