

## Capillary Flow of Wormlike Micellar Gels

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Wormlike micellar solutions formed by long-chained zwitterionic surfactants show gel-like rheology at room temperature and have recently been found to exhibit other complex and interesting rheological features. We study the capillary flow of these wormlike micellar gels to uncover rheological fingerprints on a canonical flow scenario using a combination of pressure drop measurements and optical coherence tomography-based velocimetry. Our results reveal the existence of plug flows with wall-slip along with non-parabolic velocity profiles with shear-layers for different surfactant concentrations and imposed flowrates. These experiments shed light on the fluid dynamics of wormlike micelles in simple geometries and inform ongoing attempts to understand the cross-talk between the rheology and flow of soft matter.