



G02.23

Drop Deformation in Copolymer Modified Blends: Experiments and Theory

Mosto Bousmina

*Canada Research Chair on Polymer Physics and Nanomaterials, Department of Chemical Engineering,
Laval University, CREPEC, Ste-Foy G1K 7P4, Quebec, Canada*

The deformation profile of a single droplet of one polymer imbedded in another polymer matrix in the presence of an insoluble copolymer was studied during uniaxial elongation and shear flows. The local concentration of copolymer molecules at the interface was measured with the aid of a confocal microscopy on quenched samples at different stages of deformation. For copolymer-modified system, drop deformation was mainly determined by two competing mechanisms: the flow-induced surface tension gradient, which promotes tip stretching, and the surface diffusion flux, which acts to re-establish a homogenous copolymer distribution at the interface. The obtained experimental results were compared to our recent modeling about drop deformation in the presence of interfacial agent.