

Predicting phase inversion based on the rheological behavior in Polyamide 6/Polyethylene blends

Prédiction de la composition à l'inversion de phase à partir du comportement rhéologique dans des mélanges Polyamide 6/Polyéthylène

Paul Sotta, Chloé Epinat, Trouillet-Fonti

The morphologies obtained in reactively compatibilized blends are the result of a complex interplay between instabilities due to chemical reaction at interfaces and drop breakup and coalescence processes. We have studied reactively compatibilized Polyamide6/High Density Polyethylene (PA6/HDPE) blends with widely different viscosity ratios. The relationships between the morphologies and the rheological behavior are discussed. Specifically, we show that phase inversion can be reasonably predicted, based on the rheological behavior of blends in the linear regime. Models proposed to describe the rheology of immiscible polymer blends in relation to their morphologies are discussed.