

Linear and Nonlinear Rheology of Entangled, Flexible Polymers  
that are Highly Branched

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Modern ideas about polymer dynamics and rheology have revolutionized our ability to predict and understand both linear and nonlinear behavior of linear chain polymers. These ideas can be extended to branched polymers, starting with star polymers that have a single branch point and multiple branches and then to branched polymers with multiple branch points, where the new idea of hierarchical relaxation has been introduced by McLeish and coworkers. In this talk, I attempt to provide a survey of the basic ideas as well as an idea of how well they work by use of real rheological data. Although some of the data is new, this is intended primarily as a qualitative tutorial of the fundamental ideas.