

Abstract Submitted  
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**Exploring origin of instabilities in pressure-driven flow of entangled polymers using particle-tracking velocimetric method** XIANGYANG ZHU, SHI-QING WANG, University of Akron — Well entangled polymeric materials undergo extrudate distortions commonly known as sharkskin (surface melt fracture) and gross melt fracture. Particle-tracking velocimetric (PTV) observations have been carried out to explore the relationship between gross melt fracture and entry flow instability based on polybutadiene melts. The sharkskin formation process has also been investigated based on PTV visualization of the flow field at the die exit. These instabilities have been studied in terms of the material parameters.

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