

Abstract Submitted  
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**Shear-induced homogeneous crystallisation in confined columns of polymer** JESSICA L. CARVALHO, KARI DALNOKI-VERESS, Department of Physics & Astronomy and the Brockhouse Institute for Materials Research, McMaster University, Hamilton, ON, Canada, L8S 4M1 — In previous work, we have studied the crystallisation of a system of dewetted poly(ethylene oxide) (PEO) droplets. We have shown that this defect-free system nucleates homogeneously within the droplet volume. By capping this droplet system, a parallel plate geometry is obtained with the droplets forming isolated PEO columns (a capillary bridge) between the substrate and the cap. With this geometry we are able to investigate how the application of an oscillatory shear mediates the crystal nucleation step in small, defect-free volumes of material. These studies are typically carried out in bulk systems which are dominated by heterogeneous defects, here we will present our first results on the effect of shear on homogeneous nucleation.

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