

Abstract Submitted
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Pattern Formation in Polymer Blend Thin Films NIGEL CLARKE,
SAM COVENEY, University of Sheffield — We introduce a model for thin films of multicomponent fluids which includes lateral and vertical phase separation, preferential component attraction at both surfaces, and surface roughening. We apply our model to thin films of binary polymer blends, and use simulations of different surface-blend interaction regimes to investigate pattern formation. We demonstrate that surface roughening couples to phase separation. For films undergoing lateral phase separation via a transient wetting layer, this results in distinct stages of roughening as the film evolves between different phase equilibria.

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