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Self-consistent Field Theory Simulations of the Phase Behavior of Tapered Diblock Copolymers JONATHAN BROWN, LISA HALL, Ohio State University — Phase diagrams of tapered and inverse-tapered diblock copolymers were computed by self-consistent field theory. These copolymers consist of three "blocks": a pure A block, a linear gradient "block" that is either A to B (tapered) or B to A (inverse-tapered), and a pure B block. This composition was approximated using a multi-block model in which the tapered region consisted of alternating A and B blocks of appropriate size to approximate the gradient. Phase diagrams were produced for varying sizes of the tapered region, showing a shift of the ordered phases to higher χN for larger tapered regions (and higher still for inverse-tapered systems), while preserving non-lamellar phases in some cases.

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