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Anomalous Phase Behavior of Ionic Polymer Blends and Ionic Copolymers

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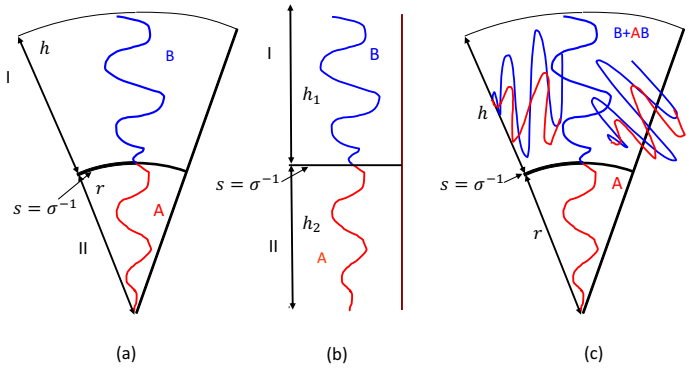

***Caption**: Schematic of the different morphologies in charged (B) and -neutral (A) copolymers: (a) cylindrical or spherical morphologies with an A core;(b) lamellar morphologies; (c) cylindrical or spherical morphologies with the core of pure A component, and the corona compose of a mixture of B+AB components.*

Scientific Achievement

We have found conditions for a partial miscibility of ionic and neutral polymers and suggested a possible mechanism of the morphology inversion in the ionic block copolymers due to such partial miscibility.

Significance

The control of the phase behavior and the morphology of the ionomers blends and copolymers is a critical factor for the development of the ionomers membranes for the ion batteries, fuel cells and desalination applications.

Citation

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