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Thermo responsive poly (2-oxazoline) block copolymers exhibiting two cloud points: **Complex multistep assembly behavior**

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queous solutions of poly (2-oxazoline) block copolymers consisting of a 2-ethyl-2-oxazoline block and a block consisting A queous solutions of poly (2-0xazoline) block copolymete conclusing 1- 1 and 2 of a random copolymer of 2-ethyl-2-oxazoline and 2-*n*-propyl-2-oxazoline (PEtOx-*block*-P (EtOx-*stat*-PropOx)) have been studied by dynamic light scattering (DLS), static light scattering (SLS) and turbidimetry. Even at temperatures significantly below the lower critical solution temperature (LCST), polymer unimers are found to co-exist with a few large aggregates with an open structure. When heated, the systems exhibit an intricate transmittance behavior whereby the samples becomes visually clear again after an initial cloud point, and then exhibit a second cloud point at even higher temperatures. The DLS data indicate that the aggregates formed around the first cloud point restructures and fragment into smaller micelle-like structures ascribed to further dehydration of the more hydrophobic PPropOx containing block, causing the samples to become optically clear again. The observed fragmentation is confirmed by the SLS experiments. At even higher temperatures, both blocks become hydrophobic causing the formation of large, compact aggregates, resulting in a second cloud point.

Biography

Loan Trinh Che is a Ph.D. student from University in Oslo (Norway) and is working with responsive polymers for the drug delivery applications. She has 5 publications

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