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Synthesis and characterization of a thermo-responsive polymer, poly-NIPAAm-co-ferroin: Perturbation on dynamical regime and stability in an oscillatory chemical reaction

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The thermo-responsive polymer- poly (n-isopropyl acrylamide) (NIPA) covalently bonded to ferroin was synthesized through free radical solution polymerization. The lower critical solution temperature (LCST) of the polymer has been observed. Moreover, to investigate the effect of ionic strength on LCST, NaCl was added to the polymer and it was seen that the salt decreased the LCST of the polymer. The polymer synthesized was then added to three BZ chemical oscillators in order to explore the effect of polymer on the oscillatory behavior. Moreover, the polymer is disintegrated in strong acidic medium (very low pH). Further, the kinetic studies on polymer in chemical oscillator were performed.

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