Synthesis of Magnetic Thermal – and pH – responsive Nanocarriers Poly (N isopropyl acrylamide-co-Acrylic acid) graft Polyaspartamide Coated Magnetic Nanoparticles for Hyperthermia and Chemotherapy Applications

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A series of pH- and thermo-sensitive poly(N-isopropyl acrylamide-co-acrylic acid) were synthesized by radical polymerization and grafted on polysuccinimide backbones. The polysuccinimide derivatives synthesized were coated on thermal-decomposition iron oxide magnetic nanoparticles for potential applications in drug delivery systems with hyperthermia and chemotherapy. The structure of polymer-shell and iron oxide was confirmed by FT-IR and 1H-NMR spectroscopies and TEM. The particle size and its behaviors distribution is measured by ELS measurement and TEM.