

## Nanocomposites and nanomaterials

### Termoresponsible properties of aqueous Dextran-graft-PNIPAM/embedded gold nanoparticles systems

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Star-like copolymers PNIPAM with Dextran core and grafted PNIPAM arms were synthesized and characterized using size exclusion chromatography equipped with light scattering, refractometry and viscometry detectors. The influence of the polymer internal structure on the conformational transition temperature range has been studied by dynamic light scattering (DLS). It was demonstrated that the thermally induced collapse of end-grafted PNIPAM arms above the lower critical solution temperature in the range 33-34 C was dependent on the chain grafting density.

Gold sols were synthesized in aqueous solution of synthesized branched polymers. The influence of macromolecular structure of polymer matrix on size distribution Gold Nanoparticles (AuNPs) in the sols and thermosensitive properties of the nanosystems (branched PNIPAM/embedded AuNPs) were studied by DLS. High storage stability as well as independence of AuNPs size from globul-to-coil transition of PNIPAM during heating-cooling cycle was shown.