

Abstract Submitted
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Supramolecular Assemblies of Poly(propyleneimine) Dendrimers Driven by Simple Monovalent Counterions SEYED ALI EGHTESEADI, FADI HASO, MARJAN ALSADAT KASHFIPOUR, DR. ROBERT LILLARD, DR. TIANBO LIU, University of Akron, DR. TIANBO LIU'S GROUP TEAM, DR. LILLARD'S GROUP COLLABORATION — Polyelectrolytes (PE) are fascinating class of polymers carrying dissociative ionic groups which give them unique properties in solutions and at charged surfaces. The properties of these polymers in solution are mainly depending on the fraction of dissociated ionic groups, the quality of solvent and salt concentration. Describing the solution properties of polyelectrolytes have always been an obstacle for polymer scientists due to their different behavior as a result of their dual character of being highly charged electrolytes and at macromolecular size. The question we tried to address was what happens to solution behavior of charged polyelectrolytes when they reach to the nano-scale size which can neither be considered as point charges nor colloids. Second generation of poly(propyleneimine) dendrimer in different solvent qualities, salt concentrations, pH and temperatures were studied using techniques such as LLS, TEM, AFM and zeta-potential, and dominant controlling factors over their self-assembly into hollow spherical “Blackberry” like nanoparticles was investigated.

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