

Abstract Submitted
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Structure and Conformation of Ionic Conjugated Polymers: Poly-dots NARESH OSTI, THUSITHA ETAMPAWALA, SIDATH WIJESINGHE, DVORA PERAHIA, Department of Chemistry, Clemson University, Clemson, SC 29634 — Conjugated polymers confining into nano dimension form long-lived highly luminescent tunable organic particles of having enormous potential for intracellular imaging and drug delivery. Even though the chains are not in their thermodynamically stable conformation, the poly-dots remain stable over long period of times. Incorporation of ionic groups into conjugated polymers introduces a configuration control factor that impacts their conformation and their applications as luminescent probes. The current work investigates the structure and stability of poly-dots of dialkoxypara polyphenyleneethynylene (PPE) conjugated polymer substituted with carboxylate side chain. Our small angle neutron scattering (SANS) studies have shown that ionic PPE forms spherical poly-dots in water. Ionic Poly-dots remain stable up to a temperature of 800C compare to neutral conjugated polymer poly dots. These polymer dots were allowed to assemble at a solid surface and observed by AFM which showed the nano aggregates of different sizes that assembled in different ways depending on the concentration and molecular parameters of the ionic PPEs used.

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