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Polyelectrolyte Bundles: Finite size at thermodynamic equilibrium? MEHMET SAYAR, HANS J. LIMBACH, CHRISTIAN HOLM, Max-Planck Institute for Polymer Research, Mainz, Germany — Experimental observation of finite size aggregates formed by polyelectrolytes such as DNA and F-actin, as well as synthetic polymers like poly(p-phenylene), has created a lot of attention in recent years. Here, bundle formation in rigid rod-like polyelectrolytes is studied via computer simulations. For the case of hydrophobically modified polyelectrolytes finite size bundles are observed even in the presence of only monovalent counterions. Furthermore, in the absence of a hydrophobic backbone, we have also observed formation of finite size aggregates via multivalent counterion condensation. The size distribution of such aggregates and the stability is analyzed in this study.

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