

Abstract Submitted  
for the MAR13 Meeting of  
The American Physical Society

**Condensation of semiflexible polyelectrolytes in mixed solutions of mono- and multivalent salts**<sup>1</sup> AMELIA A. PLUNK, ERIK LUIJTEN, Northwestern University — The salt-dependent condensation of highly charged polyelectrolytes in aqueous solution is a topic of great biological and industrial importance that has been widely studied over the past decades. It is well established that interaction with multivalent counterions leads to the formation of bundle-like aggregates for rigid polyelectrolytes and to collapsed structures or disordered aggregates for flexible polyelectrolytes. Here, we investigate the behavior of semiflexible chain molecules, where the electrostatically induced aggregation is impeded by the intrinsic bending stiffness of the polymer. Moreover, we study the competition between monovalent and multivalent counterions in mixed solutions and establish the threshold salt concentration required for condensation. Our findings are relevant for a range of biomedical problems, including the fabrication of nanoparticles for gene delivery [1] and the packaging of DNA by histones.

[1] X. Jiang *et al.*, *Adv. Mater.*, DOI: 10.1002/adma.201202932.

<sup>1</sup>This work is supported by the National Science Foundation.

Amelia A. Plunk  
Northwestern University

Date submitted: 09 Nov 2012

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