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Conformation of cellulose based polyelectrolyte NaCMC in solution: Effect of concentration and solvent quality CARLOS LOPEZ, JOAO CABRAL, Imperial College London, PETER GRAHAM, Unilever, RALPH COLBY, Pennsylvania State University — We report small angle neutron scattering (SANS) experiments on the crossover between semidilute entangled and concentrated regimes as well as the effect of a non-solvent in the conformation of sodium carboxy methyl cellulose (NaCMC), a semi-flexible polyelectrolyte. We investigate solvation and extract the correlation length dependence on concentration, solvent quality and salt content, up to eventual peak disappearance. While a sharp change is observed in rheological measurements at the crossover to the concentrated regime, only a small change or no change in the scaling of the correlation length is measured by SANS, depending on solvophobicity. The addition of a non solvent causes an increase in the low wavenumber (q) range but has little or no effect on the magnitude of the correlation length, in contrast to conductivity measurements which show a significant amount of counterion condensation.

Carlos Lopez
Imperial College London

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