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Peptide and micelle morphologies in ionic liquid ASHLEY MONTGOMERY, SANDEEP NAIK, JACOB RAY, DANIEL SAVIN, School of Polymers and High Performance Materials, University of Southern Mississippi — Ionic liquids (ILs) are considered "green" solvents that have shown interesting properties in polymeric solutions; however, potential screening effects in polyelectrolytes remain largely unexplored. These studies intend to compare the solution behavior of traditional polyelectrolytes like poly(styrene sulfonate) in ionic liquid and water. This will be extended into charged polypeptides such as poly(L-lysine) (PK) and PK-containing block copolymers. In particular, we are interested in the solution chain dimensions and secondary structure of the polypeptide and how it can potentially influence micelle morphologies in ionic liquids. Circular dichroism, dynamic light scattering and electron microscopy were used for characterization of peptide secondary structure and aggregate morphology respectively. The aggregation in ionic liquids will be compared with their aqueous counterparts.

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