

Abstract Submitted  
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**Single chain contraction and re-expansion by counterions of polyelectrolytes**<sup>1</sup> PENGXIANG JIA, JIANG ZHAO, Institute of Chemistry, Chinese Academy of Sciences, Beijing, China — We have studied the re-entrant transition of polyelectrolytes at single chain level. Diffusion rate of single chains of polystyrene sulfonate (PSSNa) has been investigated by fluorescence correlation spectroscopy under different counterion condition. Upon the addition of external salts, the hydrodynamic radius of PSSNa was found to decrease with the increase of salt concentration, i.e., the chain contracts due to electrostatic screening and ion bridging effect. When the salt concentration increased beyond a certain value, the chains were observed to increase their dimension for a few mono-, double- and triple-valent counterions. The experimental evidence shows the single chain behavior of re-entrant transition of polyelectrolytes.

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