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Investigation of the Charge Behavior of PAA Copolymers by Means of Polyelectrolyte Titration

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Extended Abstract

In this work, the charge density (CD) of polyanions and polycations were investigated by means of polyelectrolyte titration. The CD is independent on the pH for strong polyelectrolytes. For week PEL the differences of CD is dependet on the pH. Furthermore, often the pH is dependent on the concentration of PEL or by the solvent. For all applications it is necessary to determine the CD. Many processes are controlled by the CD. Low, medium, and high charged PEL were examined. Furthermore, the effects of the charge density on the flocculation performance of inorganic kaolin suspensions in the presence of different charged cationic polymers were investigated. The flocculation in the presence of low, medium, and high charge density cationic flocculants (i.e. PC10, PC44, and PC90 respectively) with high molecular weight were compared in terms of the flocculation efficiency and floc sizes.

***Keywords*:** polyelectrolytes, flocculation, solid/liquid separation, Kaolin