

Your continued interest in receiving email from us.

You may [unsubscribe](#) if you no longer wish to receive our emails.

Dispersion Technology Inc. Newsletter #28

Electrophoretic Mobility of Poly(acrylic acid)-Coated Alumina Particles

Bibliography for Related Journal Article:

Bhosale, P.S., Chun, J., And Berg, J.C. "Electrophoretic mobility of poly(acrylic acid)-coated alumina particles", *Journal of Colloid and Interface Science* 2011, 358, 123-128

Link to Article:

<http://www.sciencedirect.com/science/article/pii/S0021979711002177>

Prasad S. Bhosale, Jaehun Chun and John C. Berg

Department of Chemical Engineering, University of Washington, Seattle, WA 98195.

The effect of poly (acrylic acid) (PAA) adsorption on the electrokinetic behavior of alumina dispersions under high pH conditions was investigated as a function of polymer concentration and molecular weight as well as the presence, concentration and ion type of background electrolyte. Systems of this type are relevant to nuclear waste treatment, in which PAA is known to be an effective rheology modifier. The presence of all but the lowest molecular weight PAA studied (1800) led to decreases in dynamic electrophoretic mobility at low polymer concentrations, attributable to bridging flocculation, as verified by measurements of particle size distribution. Bridging effects increased with polymer molecular weight, and decreased with polymer concentration. Increases in background electrolyte concentration enhanced dynamic electrophoretic mobility as the polymer layers were compressed and bridging was reduced. Such enhancements were reduced as the cation was changed from K⁺ to Na⁺ to Cs⁺.