

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

## Dispersion Technology Inc. Newsletter #30

### *Use of Ultrasound Attenuation Spectroscopy to Determine the Size Distribution of Clay Tactoids in Aqueous Suspensions*

#### **Bibliography for Related Journal Article:**

Ali, Samim, and Ranjini Bandyopadhyay. "Use of Ultrasound Attenuation Spectroscopy to Determine the Size Distribution of Clay Tactoids in Aqueous Suspensions." *Langmuir* 29.41 (2013): 12663-2669.

#### **Link to Article:**

<http://pubs.acs.org/doi/abs/10.1021/la402478h>

by Samim Ali and Ranjini Bandyopadhyay

Raman Research Institute, C. V. Raman Avenue, Sadashivanagar, Bangalore 560080, India

**Abstract:** The dispersion processes of aqueous samples of clay are studied using ultrasound attenuation spectroscopy. The attenuation spectra that are acquired in the frequency range 10–100 MHz are used to determine the particle size distributions (PSDs) for different concentrations and ages of the clay suspensions. Our analysis, using equivalent spherical diameter (ESD) for circular discs under Stokes drag in samples of concentrations greater than 1.5% w/v, shows that a substantial fraction of the aggregates in suspension are actually tactoids that are composed of more than one platelet. This is in contrast to the general belief that clay disperses into individual platelets in the concentration range where their suspensions exhibit glassy behavior. We conclude that the incomplete fragmentation of the clay tactoids arises from the rapid enhancement of the intertactoid Coulombic repulsion.