

View Abstract

ABSTRACT SYMPOSIUM NAME: Colloidal Nanoparticle Synthesis and Assembly

ABSTRACT SYMPOSIUM PROGRAM AREA NAME: COLL

CONTROL ID: 3827462

PRESENTATION TYPE: Poster Preferred : Consider for Sci-Mix

TITLE: EVQ-218: A high energy nanoparticle that measures up to NIST standards

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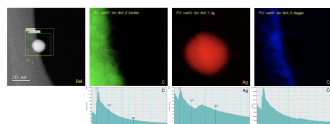
INSTITUTIONS (ALL): 1. R&D, EVOQ nano, SLC, UT, United States.

ABSTRACT BODY:

Abstract: EVQ-218 is a unique high energy nanoparticle with a method of manufacture that avoids chemical or biological synthesis. As a result, EVQ-218 possesses a truly bare surface, free of stabilizing shell chemistry present on traditional synthetic nanoparticles. Rapid, light driven formation results in an ultra-stable surface structure that is non emissive, with particles that do not aggregate or fall out of suspension. This enhanced particle stability reduces the need for surfactants or other nanomaterial preservatives.

In an everchanging regulatory landscape, there is increasing scrutiny to definitively characterize nanomaterials and assess their potential environmental/toxicological footprint. A variety of studies have been established, to compare various nanomaterials to NIST standards, and degradation species of interest (ie. ions).

EVQ-218 exhibits particle size, shape, and uniformity that is nearly equivalent to NIST standards. Differences in the two particles are distinct in their surface structure, chemistry, and reactivity. Comparative data, including kinetic stability, were obtained using a variety of methods. The most compelling data presented herein utilizes STEM-EELS to confirm distinct surface chemistry variations in the two particle systems.



DF-STEM image of EVQ-218 (left, Ref.) with EELS spectrum image maps (right, C, Ag, O). low loss dark reference corrected with spectrum of area of interest. Color coded elemental maps of carbon (green), silver (red), and oxygen (blue) show EVQ-218 has no outer oxygen content and is indeed a "bare" particle.

Presentation Preference: I wish to participate in an in-person session in Indianapolis.