

Supplementary Materials

Technical Details for SEM-EDS analysis:

The exposed tin substrate was mounted on conducting carbon tape with side contacts of silver paste. These specimens were also coated (very fine coating) with Gold-Palladium target to enhance electrical conductivity of the samples for better contrast and imaging. Finally, the specimen is ready for surface morphological analysis using SEM. Marked facet is exposed to electron gun to analyze the shape and size of the individual particles under scan. The scanning of the particles deposited on the tin substrate is done manually through the microscope. The micrographs were recorded at different magnification across the specimen with resolution of 3nm in secondary mode at 30KV accelerating voltage. SEM micrographs reveal the shape and size of the individual particles as well as group of particles scattered on tin substrate. Elemental analysis of observed particles with different shape and size were carried out using EDS attached to SEM facility. The Si-Li detector was used in EDS analysis having resolution of 133eV with detection limit of 1 % (quantitative) and 0.5 % (qualitative).

Model details:

DDA method computes light scattering for randomly oriented spherical and non-spherical particles such as spheres, ellipsoids, rectangular, triangular and hexagonal solid shapes etc. DDA works well within the size parameter, $\alpha < 15$.

Graphic for manuscript:

