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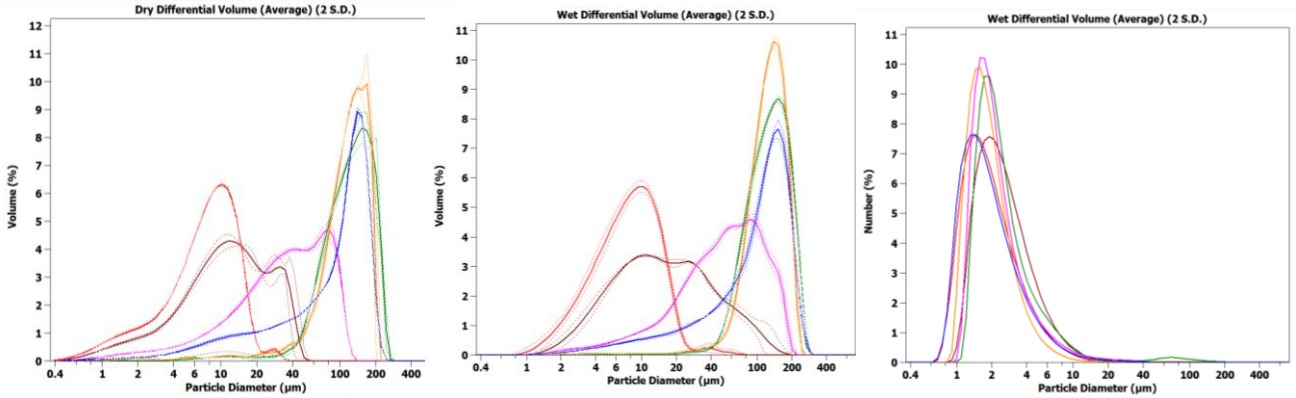
Gary Scheiffele, *Engineer III*

Gary Scheiffele has a bachelors degree in Chemistry from the University of Florida. He then participated as both a masters student and staff member in a ceramic particulate processing research group in Materials Science and Engineering at UF. He next became an integral member of UF's Particle Engineering Research Center (PERC), investigating particle systems from nano to gravel. He managed the Particle Analysis Instrumentation Center when the RSC's formed. Gary is co-author on over 20 publications and has two patents, one pending.

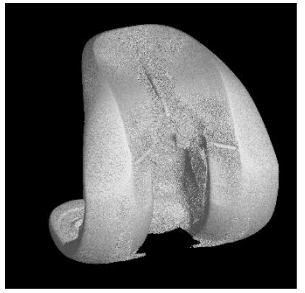
Particle and Particle Systems Characterization



A series of amorphous carbon particles were sized by forward light scattering either dry or dispersed in 2-propanol. Results indicated that the wet dispersions were not fully dispersed. Brackets of 2 standard deviations show that the wet sampling was very reproducible after splitting and riffling the samples, but the average values were not far off of those obtained by the dry method using >100x more material. In this case more material is easily obtained and yields a much faster representation of the particle size distribution. Reporting as number percent shows the particle size range where the most surface area is present, but most of the mass is in the 10-200 µm range depending on the sample.

X-Ray CT and Reconstruction/Segmentation

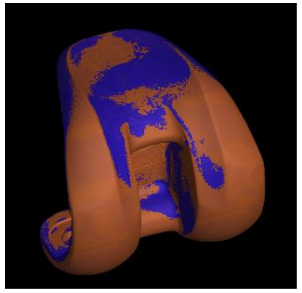
Water Immersion



Oil Immersion

Al Foil Wrapped

Overlaid Scans



Combined Scans

Surface determination for a highly polished stainless steel specimen having multiple internal and external curved surfaces was desired. The surface was indeterminate from a single scan in air due to X-ray scattering artifacts. These scattering artifacts were observed to decrease when the sample was scanned immersed in water, oil, and aluminum foil. The final surface determination was obtained by scanning the aluminum foil wrapped specimen in two different orientations and then combining the resulting 3D volumes.