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Simultaneous multiple samples investigation with digital holographic microscopy NAVA SUBEDI, Department of Physics and Astronomy, Mississippi State University, MATTHEW BERG, Department of Physics, Kansas State University — This work explores several techniques in digital holography to image 10-300 microns sized particles and provide information useful for their characterization. In particular, digital holograms are formed with both forward- and backward-scattered light from samples fixed to a glass stage. Images of these particles are then rendered from the holograms that reveal aspects of the particle-surface structure. The forward- and backward-scattered light holograms are obtained simultaneously so that a side-by-side comparison of the two images is possible. In addition, this work also explores the simultaneous multiple samples investigation technique with digital holographic microscopy. This work could be supportive to insight more on the particles' morphology and subsequently improve the microparticles characterization technique for broad range applications.

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