

Abstract Submitted
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A New Experimental Approach in Digital Holographic Microscopy to Insight into Submicron-sized Particle's Scattering Properties. NAVA SUBEDI, MATTHEW BERG, Mississippi State University — A novel application of digital holographic microscopy is presented. In this work, a submicron-sized particle is illuminated by two different wavelengths. Then, a special filtering technique is used so that the one wavelength only contributes to form the hologram of the particle in a flow-through, contact-free manner and other to produce the scattering pattern of the illuminating wave in the same plane. Later, an algorithm is applied to separate these two overlapping information. The separated holographic information is used to reconstruct the image of the particle and scattering pattern is used to analyze redistribution of energy on the medium caused by the particle. This information is unique to the particle's shape and size, thus provides the insight into a particle's scattering properties simultaneously with an image of the particle.

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