

Abstract Submitted
for the TSF11 Meeting of
The American Physical Society

Common-path spectral phase microscopy NELSON CARDENAS, SAMARENDRA MOHANTY, UT Arlington — Quantitative phase microscopy is an emerging non-contact method for quantifying physical properties (refractive index, thickness) of materials. The high spatial resolution achieved with millisecond-scale resolution using this non-staining method over a wide-field of view is highly advantageous for mapping dynamic changes in the sample properties due to temperature, pressure and molecular interactions. Since refractive index dispersion is intrinsic to a material, the spectral measurement of refractive index changes will allow characterization and analytical quantification of material. Here, we introduce common-path spectral phase microscopic (CP-SPM) imaging of microscopic objects. CP-SPM is based on a common path interferometer with a tunable laser beam. With this method, we are able to characterize both the refractive index of particles over a continuous wavelength band, and also the characteristics of several types of particles simultaneously.

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Date submitted: 19 Sep 2011

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