
Fourier-Based White-Light Interferometric Microscopy for Surface Topography and Spectral Imaging

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Abstract

White-light interferometric microscopy enables non-destructive, full-field measurement of surface topography and optical properties. Recording interference patterns while scanning the sample and calibrating, a hyperspectral reflectance map is generated. Using a Mirau-type interferometer with Fourier transform processing provides the spectral response of the sample with diffraction-limited lateral resolution of a few micrometers and axial sensitivity of around one nanometer. The method allows simultaneous acquisition of quantitative topography and spectral reflectance over small areas.

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