

Surface Topography Measurement by Confocal Spectral Interferometry

Authors : A. Manallah, C. Meier

Abstract : Confocal spectral interferometry (CSI) is an innovative optical method for determining microtopography of surfaces and thickness of transparent layers, based on the combination of two optical principles: confocal imaging, and spectral interferometry. Confocal optical system images at each instant a single point of the sample. The whole surface is reconstructed by plan scanning. The interference signal generated by mixing two white-light beams is analyzed using a spectrometer. In this work, five ‘‘rugotests’’ of known standard roughnesses are investigated. The topography is then measured and illustrated, and the equivalent roughness is determined and compared with the standard values.

Keywords : confocal spectral interferometry, nondestructive testing, optical metrology, surface topography, roughness

Conference Title : ICOP 2017 : International Conference on Optics and Photonics

Conference Location : Stockholm, Sweden

Conference Dates : July 13-14, 2017