

Refractive indices and correction coefficients for certain optically transparent media

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Laser interferometry is a common method currently used for recording fast processes. Laser interferometry complexes available at RFNC-VNIITF are based on optical heterodyning technique PDV (photon Doppler velocimetry) and are designed for a radiation wavelength of 1550 nm. Certain measurements are performed through unloading structural materials under study into various optically transparent window media. Thus, an important feature to consider here is the fact that the measured velocity of sample-window interface (“apparent” velocity) would be different from the true one. This is due to the window medium characteristic, i.e. window refractive index. The report presents the results of studying refractive indices and correction coefficients for such window materials as PMMA (TOSP), lithium fluoride (LiF), periclas (MgO), and fused silica (SiO₂) for probing laser wavelength of 1550 nm.