# Abstracts

## An anti-reflection coating for silicon optics at terahertz frequencies

*A.J. Gatesman, J. Waldman, M. Ji, C. Musante and S. Yagvesson. "An anti-reflection coating for silicon optics at terahertz frequencies." 2000 Microwave and Guided Wave Letters 10.7 (Jul. 2000 [MGWL]): 264-266.*

A method for reducing the reflections from silicon optics at terahertz frequencies has been investigated. In this study, we used thin films of parylene as an anti-reflection (AR) layer for silicon optics and show low-loss behavior well above 1 THz. Transmittance spectra are acquired on double-sided-parylene-coated, high-resistivity, single-crystal silicon etalons between 0.45 THz and 2.8 THz. Modeling the optical behavior of the three-layer system allowed for the determination of the refractive index and absorption coefficient of parylene at these frequencies. Our data indicate a refractive index, n, of 1.62 for parylene C and parylene D, and a reasonably modest absorption coefficient make these materials a suitable AR coating for silicon at terahertz frequencies. Coatings sufficiently thick for AR performance reduced the average transmittance of the three-layer system by <10% compared to a lossless AR coating with an ideal refractive index.

❑ Return to main document.