# Abstracts

## Optimizing Fiber Coatings for Interferometric Acoustic Sensors

*N. Lagakos, E.U. Schnaus, J.H. Cole, J. Jarzynski and J.A. Bucaro. "Optimizing Fiber Coatings for Interferometric Acoustic Sensors." 1982 Transactions on Microwave Theory and Techniques 30.4 (Apr. 1982 [T-MTT] (Joint Special Issue on Optical Guided Wave Technology)): 529-535.*

The pressure sensitivity of the phase of light propagating in an optical fiber is studied both analytically and experimentally. The analysis, which takes into account the exact composition and geometry of multilayer fibers, is utilized to identify coating properties which optimize the fiber acoustic sensitivity. In order to predict the fiber acoustic sensitivity, the elastic parameters of commonly used coating materials, thermoplastics, and UV curable elastomers have been studied in bulk samples as a function of frequency (10² - 10/sup 4/ Hz) and temperature (0-35° C). The analytically predicted frequency dependence of the acoustic sensitivity is found to be in agreement with that obtained experimentally from fibers with coatings of various materials.

❑ Return to main document.