

Abstract Submitted
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Effect of applied *ac* electric field on surface plasmon excitations at metal/liquid-crystal interface KUNAL TIWARI, SURESH SHARMA, University of Texas at Arlington — It is well known that surface plasmon polaritons (SPPs) can be excited by *p*-polarized laser beam incident upon high-index prism/metal/dielectric medium used in Kretschmann configuration. The SPPs' onset, evidenced by a loss in the intensity of totally reflected light at a certain angle greater than the critical angle for total reflection, is sensitive to the dielectric properties of the medium. In the case when the dielectric medium is liquid crystal (LC), its dielectric properties can be modified by applied electric fields. We have carried out a set of experiments on high-index prism/Au/LC used in the Kretschmann configuration. Specifically, we have measured a set of attenuated total reflection (ATR) data as functions of incident angle for *p*-polarized 632 nm laser beam and *ac* electric fields for liquid crystals. We present data on the effects of the applied *ac* electric fields on the nature of the reflectivity *vs* angle curves and discuss the relevance of our observations to the electric-field-induced changes in the dielectric properties of the liquid crystal.

Suresh Sharma
University of Texas at Arlington

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