FAST POLARIZATION ANALYSIS BY NONLINEAR OPTICAL STOKES ELLIPSOMETERY (NOSE)

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Use of second harmonic generation (SHG) to examine surface interfacial regions has been carried out for systems that lack inversion symmetry. Such measurements have required a lengthy acquisition time, limiting the systems that can be investigated. An instrument allowing the probing of dynamic systems is desirable. Resulting data for NOSE measurements made on several dyes, crystalline films of sugars and amino acids have resulted in $\chi^{(2)}$ tensors with an order of magnitude more precision than previous measurements in a fraction of the time required for mechanically rotated waveplates.