

Application of Surface Plasmon-Enhanced Ellipsometry to Refractive Index Measurement of Aqueous Sucrose Solutions

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Abstract. In this work, we present refractive index measurements of aqueous sucrose solutions of different concentrations using surface plasmon-enhanced ellipsometry, also known as total internal reflection ellipsometry. The measurements follow the procedure reported in our previous study, where we determined the refractive index of aqueous isopropyl alcohol mixtures from the resonance condition of surface plasmon excitation. The aim is to test the stability of the procedure under comparable experimental conditions. The refractive index is evaluated at wavelengths for which the surface plasmon resonance condition can be reached experimentally.