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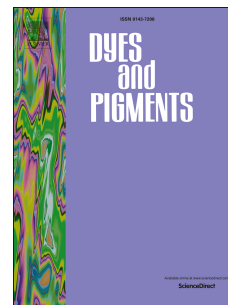
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The Acoustical Sensor: the photoacoustic effect in an azo-dye

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Abstract:

The photoacoustic (PA) signal of DR1 dye in six solvents with different polarity, density and the coefficient of viscosity were investigated by a simple experimental set up. The measurements were performed at 532 nm using a Nd:YAG CW laser with irradiation of 300 mW. In the middle of experiment, A sound produced when the sample exposed to the laser irradiation at a critical power therefore it acts as an acoustic sensor. It is demonstrated that the maximum photoacoustic frequency amplitude of PA in an exact frequency has an inverse proportion to viscosity coefficient of solvents and verify the theoretical equations.

Key words: *Acoustical Sensor, Photoacoustic effect, DR1 solution, viscosity coefficient.*

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