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Thermal parameters of solids determination by the photodeflection method - theories and experiment comparison

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Abstract

This paper is concerned with the application of complex geometrical optics equations to sample thermal parameters determination by the photodeflection method. The thermal diffusivity of a sample is determined using the four parameters least-squares-fitting of theoretical dependence of normal photodeflection signal on angular modulation frequency to the experimental data. The calculation of the signal on the basis of complex geometrical optics is proved to be more accurate approach of determining the sample thermal diffusivity than that based on the geometrical and wave optics.



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