



Thermal characterization of liquids and pastes using the flash technique

J. Blumm^{*}, A. Lindemann, S. Min

NETZSCH-Gerätebau GmbH, Wittelsbacherstr. 42, 95100 Selb/Bavaria, Germany

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Abstract

For decades, flash methods [W.J. Parker, R.J. Jenkins, C.P. Butler, G.L. Abbott, *J. Appl. Phys.* 32 (1961) 1679–1684] have been well-known for characterizing the thermophysical properties such as the thermal diffusivity of solid materials. Fast measurement times, easy sample preparation and high accuracy are only some of the advantages of this non-contact, non-destructive measurement technique. Furthermore, the method can easily be adapted to the analysis of multi-layer samples as long as appropriate mathematical models are employed for the analysis of the detector curves. Nowadays, characterization of liquids, pastes and melts is becoming increasingly important for industrial applications. Presented in this work are principle details regarding newly developed sample holders for such applications. Furthermore, reliability tests (on water and ethylene glycol) are presented and compared to literature values. Additionally, some application examples on pastes and polymer melts are shown.

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