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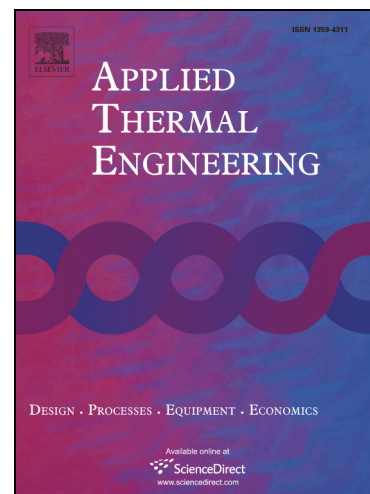
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# Measurement of Thermal diffusivity/Thermal Contact Resistance Using Laser Photothermal Method at Cryogenic Temperatures

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ARTICLE INFO	ABSTRACT
Article history:	The Laser Photothermal Method (LPM), which is a transient non-contact
Received	technique, was employed to measure the thermal physical parameters of Stainless
Received in revised form	Steel 304 (SS304), Oxygen-Free Copper (OFC) and Aluminum Nitride (AlN)
Accepted	ceramics. The thermal diffusivity of SS304, OFC and AlN ceramic were
<i>Keywords:</i>	measured by the LPM and some explanations for the tendency with the
Laser Photothermal Method	temperature were given. Compared with the reference values, it showed that the
Thermal diffusivity	LPM is reliable in measuring thermal parameters. Following, the thermal contact
Thermal Contact Resistance	resistances (TCRs) of OFC-AlN ceramic, SS304-AlN, SS304-SS304 and AlN
Empirical formula	ceramic were measured in the temperature range from 70 K to 300 K and the
	contact pressure was on the order of 0.10 MPa. Some explanations were given to
	make clear the changing trend of TCRs with the increase of temperature.
	Moreover, some empirical formulas of the TCRs were established. The accuracy
	of the establishing empirical formulas had been validated by the experiment, and
	the error was smaller than 9%.

## Nomenclature

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