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ABSTRACT

PRESENTATION

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Sruthi Krishna Kunji Purayil works for Federal Institute for Materials Research and Testing (BAM) in Berlin, Germany.

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ANISOTROPY INVESTIGATION OF A SINGLE CRYSTAL SUPERALLOY USING LASER-SPOT INFRARED THERMOGRAPHY

In this study, a single crystal superalloy is tested using laser-spot thermography and its thermal anisotropy is investigated. Determining anisotropic thermal conductivity at microscopic scales is challenging, as it appears isotropic in the macroscopic scale. Infrared thermography is one of the well-known techniques for measuring the heat transfer properties of materials and laser-spot thermography facilitates an in-depth study with higher spatial and temporal resolution. The in-plane thermal conductivities calculated from experimental thermal measurements can be related to the anisotropy of the material, which helps in understanding the heat-flow in the structure and improves overall performance of the material system.