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An overview of infrared analysis of thermomechanical behavior of materials

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Abstract

The characterization of material behavior under various loading conditions involves two closely related aspects, namely mechanical and thermal, that can be grouped into one general thermomechanical framework. The goal of this paper is to briefly review specific applications of infrared techniques, over a range of loading conditions such as quasi-static, polycyclic for various types of materials. Some experimental and theoretical issues are discussed to emphasize the additional knowledge that can be gained through the application of these techniques to the mechanical characterization of materials.

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