



Presented at NDE2002, to predict. assure. improve. www.nde2002.org
National Seminar of ISNT, the Indian Society for Non Destructive Testing
Hotel Taj Connemara and Raja Muthiah Hall, Chennai, 05. – 07. 12. 2002

Ultrasonic Characterization and Spectroscopic Analysis of Ceramic Materials

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Abstract

Ceramic materials have an important and critical role in the thermostructural applications. In rocketry these critical materials are required in only small quantities. However they are required to be characterized in total to make rocket performance predictable to the finest details. If local variation exists in the material, non-uniform behaviour of the material results in performance variation. Non destructive material characterization enables one to find out the local variation of the material property very effectively. This paper describes the development of an ultrasonic spectroscopic methodology and application of advanced existing methodologies for ceramic materials. The results are discussed in details with tables, graphs, and theoretical analysis.