

Measuring high temperatures – Issues and Approaches

Abstract

Non-contact measurement of temperature becomes a necessity in science and industry particularly when the temperatures are high and/or when the environment is harsh. The task of determining the temperature of an object when the emissivity data is available has been successfully addressed in the past using radiometric data at single wavelength. At high temperatures, specimen's emissivity data is either unavailable, or difficult to measure. Changes in the specimen's thermodynamic state/phase, changes in specimen's surface conditions such as oxidation, harsh environments make the task more difficult. We shall look at two approaches - attempts to model emissivity and multi-wavelength radiometry - that have been pursued to deal with these issues.

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