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Thermal Radiative Properties of Materials – Fundamentals, Examples & Applications

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Abstract

A broad overview of the thermal radiative properties of materials is presented. The fundamentals of optical properties of materials in the infrared, as function of temperature, is discussed. Experimental techniques that facilitate the measurements of optical properties of materials in the infrared are showcased. Case studies of a variety of materials and material structures are examined. Examples of these properties in monitoring materials processing are highlighted. Approaches to thermal modeling of radiative properties of materials are investigated. Applications relating to optical components such as detectors/imaging systems, filters and lenses are analyzed.

Keywords: *Thermal radiative material, Applications*

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