MEASUREMENT METHOD

SPECTRAL NORMAL HEMISPHERICAL REFLECTIVITY AT ROOM TEMPERATURE (SNHRRT – UV-VIS-NIR)

Method for measurement of the spectral normal hemispherical reflectivity (spectral normal emissivity) in visible and near-infrared wavelength band at room temperature. Essential parts of the experimental method are a dispersive spectrometer, integrating sphere accessory with angle of incidence of 8° and calibrated reflectivity standards with a different degree of reflectivity. The method allows analysis of both semitransparent and opaque bulk materials and coatings at room temperature and the wavelength range 0.25 to 1.1 μm. Detailed information is at http://ttp.zcu.cz/en/laboratories/optical-properties/methods/snhrrt.

► Experimental system
Radiation from the internal source of the spectrometer is directed by a mirror into the reflectivity measurement accessory - integrating sphere, where it hits the sample (or reflectivity standard) located at the opposite side of the sphere. The radiation incident on the sample is reflected into the integrating sphere. The inner surface of the integrating sphere is made of highly-reflective Spectralon material, which ensures reflection (scattering) of the incident radiation in all directions, i.e. to the entire hemisphere. Radiation reflected from the sample surface is repeatedly reflected inside the integrating sphere until it leaks through the detector port onto the detector.

► Analyzed sample
coatings / circular shape
bulk materials / square shape

► Output of the method

► Specifications
Measured quantity: reflectivity
Computed quantities: absorptivity
Temperatures: room (25°C)
Wavelengths: 0.25 to 1.1 μm (UV-VIS-NIR)
Incidence angle: 8°

► Responsible person
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