Deutsches Zentrum
DLR für Luft- und Raumfahrt

Handout

Fourier Transform Infrared Spectroscopy (FT-IR)

Measured values
- Spectral transmission or reflection

Principle
Main components of an FT-IR spectrometer are a broadband light source, a Michelson-interferometer and an appropriate detector (Si or Ge). By tuning one interferometer arm, an interferogram is recorded. This interferogram is then Fourier transformed and a characteristic transmission or reflection spectrum of the sample is obtained. Measuring ranges are 0.7 -1.2 µm, 1.0 -2.5 µm and 2.5-25 µm.

Application
Characterization of optical components such as resonator mirrors or laser windows in view of spectral transmission or reflection (quality inspection)

Literature / References

- 1. Nickel, D., Fleig, C., Erhard, A., Letsch, A., Giesen, A., Riede, W. et al.: Results of a "Round Robin" experiment on reflectivity measurements at a wavelength of 1.06µm. Boulder Damage Symposium, Boulder, Colorado, USA ,16-18 September 2002, SPIE, Laser-Induced Damage in Optical Materials: 2002 and 7th International Workshop on Laser Beam and Optics Characterization, S. 520-526, SPIE, (2003)

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This handout, and cross-references to related measurement techiques and facilities are available at: http://messtec.dlr.de/link-146-en.

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