Abstracts

An Intercomparison of Measurement Techniques for the Determination of the Dielectric Properties of Solids at Near Millimetre Wavelengths

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The results of a measurement intercomparison aimed at assessing the systematic errors in near-millimetre-wavelength dielectric measurements on reasonably transparent solid specimens are presented and discussed. Various monochromatic, broad band, guided wave and free space measurement methods were intercompared in the frequency region from 30 to 900 GHz using round-robin measurements of the refractive index and absorption coefficient of 7 specimens. Typically, systematic errors of up to 1% were found in the refractive index results, while very much larger systematic errors were found in the absorption results.

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