

THIN FILMS FOR MICROWAVE ABSORPTION AND TERAHERTZ APPLICATIONS

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The cheap thin films are proposed for shielding and absorption applications for frequencies up to 1 THz. The electromagnetic properties of commercially available window tinting films were studied in microwave (12-18 GHz) and terahertz (0.2-1.0 THz) frequency ranges. The optical and infrared characteristics of tinting films are precisely controlled during the fabrication process at the factory. In certain cases, the fine control of optical properties can also be used for extended additional applications in the lower frequency ranges: terahertz and microwave.

The reflection and transmission coefficients of two different series of window tint films were experimentally measured and compared with optical characteristics. The equivalent sheet resistance of studied samples was estimated from measured experimental data.

The obtained results demonstrate the significant potential of using tinting films for microwave and terahertz applications.