Abstracts

Characterization and application of dichroic filters in the 0.1-3-THz region

C. Winnewisser, F.T. Lewen, M. Schall, M. Walther and H. Helm. "Characterization and application of dichroic filters in the 0.1-3-THz region." 2000 Transactions on Microwave Theory and Techniques 48.4 (Apr. 2000, Part II [T-MTT] (Special Issue on Terahertz Electronics)): 744-749.

Low-loss dichroic filters, a subgroup of frequency-selective components, have been characterized by terahertz time-domain spectroscopy in the region from 0.1 to 3 THz and with Fourier transform spectroscopy. The two data sets are fully consistent. The time-domain spectrometer is used to investigate the phase velocity behavior of dichroic filters. The dichroic filters have various applications in frequency mixing, multiplying, and diplexing experiments. In a novel application, cascaded filters were used to limit the terahertz pulse bandwidth and to monitor molecular transitions of atmospheric water vapor in a selected frequency band.

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