

Abstract Submitted
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Complex Permittivity Measurements of Dielectrics and Semiconductors in Millimeter-Wave Range with High Power Sources KONSTANTIN KOROLEV, MOHAMMED AFSAR, LAKSHMI SUBRAMANIAN, IGOR TKACHOV, Dept. of Electrical and Computer Engineering, Tufts University — We present complex dielectric permittivity measurements of various semiconductor and dielectric materials, including highly absorbing substances, in Q -, V - and W -band frequencies. The measurements have been done using broad-band quasi-optical millimeter-wave system with a backward-wave oscillator as a high power source of radiation. Frequency dependencies of real and imaginary parts of dielectric permittivity are calculated from the transmittance spectra. Refractive index data, obtained using both waveguide bridge technique and free space measurements have been compared with previously published data. The work was supported by US Army contracts.

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