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Point Defects and Dielectric Loss at MM Wavelengths in Wide-Gap Semiconductors JYOTSNA DUTTA, CHARLES JONES, North Carolina Central University, V.V. PARSHIN, Applied Physics Institute, RAS, B. GARIN, V.I. POLYAKOV, A. RUKOVISHNIKOV, Inst. of Radio Engineering and Electronics, RAS — Data are presented on wide-gap semiconductors of various grades for their dielectric loss values at millimeter wavelengths to explore their potential for various RF technology related applications. In order to identify the impurities or electrically active defects that give rise to the excess loss, temperature-dependent conductivity and DLTS measurements have been undertaken. Dielectric loss measurements over a wide range of temperatures are in progress to verify the results obtained from electrical methods and help to determine the primary loss mechanisms for these materials in the millimeter wave length range. Experimental results and their implications to loss properties will be discussed.

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