

FORWARD AND BACKWARD DIFFRACTION RADIATION OF RELATIVISTIC ELECTRONS IN A DIELECTRIC TARGETS

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During the interaction of the relativistic electrons field with a dielectric target various types of electromagnetic radiation, such as Cerenkov radiation, diffraction radiation, transition radiation can be generated. In this report we present the results of experimental studies of the diffraction radiation generated by relativistic electrons in a dielectric target at the interface vacuum-insulator and insulator-conductor in the millimeter wavelength range. The experimental results show that the component of the diffraction radiation of relativistic electrons at the interface insulator-conductor, for any significant refractive index of insulator, is suppressed. The analysis of the results from different points of view was done.

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