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Title: Gain Enhancement by Dielectric Horns in the Terahertz Band

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Abstract: A new geometry for the design of antennas in the Terahertz band is presented. The structure is based on a horn antenna etched in the substrate and fed with a planar printed antenna used for generation of terahertz radiation, designed for the 200 GHz to 3 THz range. For the proposed antenna, the energy distribution through the substrate is reduced towards an increase in the gain of the system, at least, 8 dB in a 1: 10 bandwidth. The structure has been measured showing the expected behavior in the low band.