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Title:Experimental confirmation of design techniques for effective bow-tie antenna lengths at THz frequencies
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Abstract:We present on the relationship between the bow-tie antenna length and its THz spectral emission response. Three well-known approaches for predicting accurate antenna length for a given central frequency were utilized and their validity was experimentally tested. It is shown that the simple quasi-static approach compare to other approximations is valid for frequencies up to ~1.5 THz. The bow-tie THz photoconcudtive (PC) emitter designed using this approximation exhibits THz radiation having the most accurate central frequency compared to the design frequency. Interestingly, the THz PC emitter utilized from this design technique also possesses the optimum radiation bandwidth.
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