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Title:Broadband slow-wave systems of subwavelength thickness excited by a metal wire

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Abstract:We propose a broadband slow-wave system based on metallic graded grating structures of subwavelength thickness. A metal wire is used to excite the slow waves propagating along the gratings. The analysis and full-wave simulations show that the electromagnetic waves could be stopped at designed positions under different frequencies. Experiments are conducted in the microwave frequencies to verify the proposed system. The measured results show very good agreements to the full-wave simulations. We have further modeled a broadband slow-wave system of subwavelength thickness in the terahertz (THz) frequencies to demonstrate its validity. © 2011 American Institute of Physics.