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Authors:Wichmann, Matthias (1); Scherger, Benedikt (1); Schumann, Steffen (1); Lippert, Sina (1); Scheller, Maik (1); Busch, Stefan F. (1); Jansen, Christian (1); Koch, Martin (1)
Author affiliation:(1) Fachbereich Physik, Philipps-Universität Marburg, Renthof 5, 35032 Marburg, Germany
Corresponding author:Wichmann, M.(matthias.wichmann@physik.uni-marburg.de)
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Abstract:Typical lenses suffer from Fresnel reflections at their surfaces, reducing the transmitted power and leading to interference phenomena. While antireflection coatings can efficiently suppress these reflections for a small frequency window, broadband antireflection coatings remain challenging. In this paper, we report on the simulation and experimental investigation of Brewster lenses in the THz-range. These lenses can be operated under the Brewster angle, ensuring reflection-free transmission of p-polarized light in an extremely broad spectral range. Experimental proof of the excellent focusing capabilities of the Brewster lenses is given by frequency and spatially resolved focus plane measurements using a fibercoupled THz-TDS system.
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