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Title:Integrating a plasmonic coupler to photo detector of terahertz frequency
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Abstract:Projection type photo lithography and electroplating techniques were applied to fabricate a plasmonic coupler, and to integrate the coupler on top of a photo detector for terahertz frequency. The coupler is a metallic disk with a sub-wavelength aperture surrounded by concentric gratings. The period and height of the gratings are about 200 μm and 20 μm, respectively. The photo detector is 2-dimensional electron gas in perpendicular magnetic field. The photo signal is change of longitudinal resistance, due to cyclotron absorption of photons. Enhancement of photo signal, due to presence of the plasmonic coupler, was observed. © 2012 American Institute of Physics.
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