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Accession number:20113214225437 Title:Simulation and experiments for a broadband terahertz absorber Authors: Zhang, Dainan (1); Wen, Qiye (2); Xie, Yunsong (2) Author affiliation:(1) Elite College, University of Electronic Science and Technology of China, Chengdu 610054, China; (2) State Key Laboratory of Electronic Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu 610054, China Corresponding author: Wen, Q.(qywen@163.com) Source title: Chinese Optics Letters Abbreviated source title: Chin. Opt. Lett. Volume:9 Issue:SUPPL. 1 Issue date:June 2011 Publication year:2011 Pages:S10402 Language:English ISSN:16717694 Document type: Journal article (JA) Publisher:Science Press, 18, Shuangqing Street, Haidian, Beijing, 100085, China Abstract: A metamaterial (MM) absorber is very attractive in the terahertz (THz) regime for its potential applications as a bolometer and thermal emitter. In this letter, we propose a transmission

potential applications as a bolometer and thermal emitter. In this letter, we propose a transmission line model for the MM absorber in order to identify the basic absorption mechanism involved. Some strategies are put forward to widen the absorption bands to over 250 GHz. A new kind of MM absorber is designed, fabricated, and measured. The results show that a strong absorption of over 90% with a bandwidth of over 300 GHz is obtained, facilitating wide-frequency applications. Number of references:13