

412. Title:Thermal broadband tunable Terahertz metamaterials

Authors:Zhu, Jun (1); Han, Jianguang (1); Tian, Zhen (1); Gu, Jianqiang (1); Chen, Zhongyong (2); Zhang, Weili (3)

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Abstract:A thermally tunable metamaterial comprising a periodic array of metallic split-ring resonators with an embedded semiconductor has been proposed. The resonance frequencies of the metamaterial are demonstrated to be continuously tuned in the terahertz regime by increasing the temperature. The tunability is attributed to the temperature-dependent permittivity of the embedded semiconductor and well analyzed by an equivalent capacitor-inductor model. The proposed designs ensure broadband thermally tunable terahertz devices.