49. Title: Tunable THz metamaterials based on an array of paraelectric SrTiO3 rods
Author: Yahiaoui, R; Nemec, H; Kuzel, P; Kadlec, F; Kadlec, C; Mounaix, P
Source: APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING
Volume:103
Issue:3
Pages: 689-692
Publication year: 2011
Document type:Journal article (JA)
Abstract: This work presents theoretical and experimental investigations of a tunable metamaterial which exhibits negative permeability in the THz frequency range. The tunability is obtained by temperature changes, and the sample consists of an array of high-permittivity SrTiO3 (STO) rods micromachined by a femtosecond laser. Structures exhibiting a negative permeability on multiple frequency bands are also investigated and a proper choice of the dimensions of the pattern allows us to achieve a substantial broadening of the frequency band with negative mu.