Contribution ID: **170** Type: **Oral**

TUNABLE NONLINEAR MAGNETOELECTRIC NICKEL FERRITE RESONATOR

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Abstract

We present the results of experimental observation of room-temperature nonlinear magnetoelectric effect in single-crystal nickel ferrite resonator in centimetre wave band. It was demonstrated that brief application of in-plane DC electric voltage results in a noticeable (up to 500 MHz) shift of magnetostatic resonance frequency, which is linearly proportional to the applied electric power and very weakly depends on the bias magnetic field. A prolonged application of voltage allowed to estimate the Joule heat influence as ≈5 % of the total frequency shift.

Type of Book of Abstracts

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Session Classification: Physics of Magnetism

Track Classification: Physics of Magnetism