103. Title: Interaction of Terahertz Electromagnetic Radiation with a Probe-Object System in a Terahertz Apertureless Near-Field Microscope

Author: Trukhin, VN; Andrianov, AV; Bykov, VA; Golubok, AO; Zinov'ev, NN; Samoilov, LL; Sapozhnikov, ID; Trukhin, AV; Fel'shtyn, ML

Source: JETP LETTERS

Volume:93

Issue:3

Pages: 119-123

Publication year: 2011

Document type:Journal article (JA)

Abstract: The mechanism of the interaction of coherent terahertz radiation with a probe-nanoobject system has been experimentally investigated in a terahertz apertureless near-field microscope. It has been found that the type of the material of a sample under the probe, as well as the geometry of the probe, determines the form of the dependence of the differential signal of the terahertz field on the distance between the probe and sample. The amplitude of the modulation of the probe height significantly affects the spectral composition of the differential terahertz signal, which is directly related to the amplitude and phase of a terahertz wave scattered by the probe-nanoobject system.