Contribution ID: 157

Type: Poster

RF OSCILLATIONS OF ABRIKOSOV VORTICES AND RELATED SURFACE RESISTANCE IN THE MIXED STATE OF NANOSTRUCTURED SUPERCONDUCTING FILMS

Contact Phone

Abstract

Implantation of dielectric nanoparticles or point-like radiation defects in the interior of high-Tc superconductor (HTS)can significantly improve its characteristics at microwave frequencies. Namely, this nanotechnological treatment allows to decrease the microwave surface resistance, Rs , in the Meissner state and eliminate Abrikosov vortices oscillations and related energy losses in the mixes state of the film, thus decreasing the Abrikosov vortices contribution to the Rs value in the mixed state of HTS film. In the present work rf- oscillations of elastic vortex strings, as well as their contribution to the microwave surface resistance, are considered for the mixed state of superconducting film with implanted nanoparticles, providing point-like and extended linear pinning sites for oscillating vortices.

Type of Book of Abstracts

Primary authors: POKUSINSKYY, Anton (Taras Shevchenko National University of Kyiv); Prof. KASATKIN, Alexander (Institute of Metal Physics)

Presenter: POKUSINSKYY, Anton (Taras Shevchenko National University of Kyiv)

Session Classification: Physics of Semiconductors and Dielectrics, Semiconductor's Devices

Track Classification: Surface Physics, Nano- and Microelectronics