

STUDIES ON THE EFFECT OF COATING Nb WITH THIN LAYERS OF ANOTHER SUPERCONDUCTOR SUCH AS NbN AND MgB₂

T. Tajima, A. Canabal, G.V. Eremeev, LANL, Los Alamos, New Mexico;
I.E. Campisi, ORNL, Oak Ridge, Tennessee;
X. Xi, Penn State University, University Park, Pennsylvania;
V.A. Dolgashev, S.G. Tantawi, SLAC, Menlo Park, California

Abstract

We are currently testing the effect of coating Nb with a thin layer of another superconductor such as NbN and MgB₂. Gurevich's theory of multi-layered coating predicts an enhancement of the critical magnetic field, giving us hope to increase the achievable accelerating gradient to above 50 MV/m in elliptical cavities. CW test results of 3 GHz Nb single-cell cavities coated with ~100 nm NbN at LANL and 11.4 GHz <1 μs high-power pulsed test results of 2" Nb disk samples coated with ~100 nm MgB₂ will be presented.

**CONTRIBUTION NOT
RECEIVED**