ADVANCES IN ERLS AND MICROWAVE SUPERCONDUCTIVITY FOR LEPTON ACCELERATORS, COLLIDERS AND LIGHT SOURCES

J.R. Delayen, S. Chattopadhyay, Jefferson Lab, Newport News, Virginia

Abstract

Recent progress in efficient use and recovery of microwave energy in high current and high energy CW superconducting recirculating electron linacs such as the Continuous Electron Beam Accelerator Facility and the Free Electron Laser at Jefferson Lab are presented. Simultaneous with operational success of the ERL, progress in achievable gradients and performance of single crystal and large grain niobium superconducting cavities (including various processing techniques such as electropolishing), at the fundamental limit of RF superconductivity, will also be presented. The promising future direction in lepton accelerators, colliders and light source development using ERL and SCRF will be pointed out.

PAPER NOT YET RECEIVED