Activities of the KEK L-band SRF Cavity Group

Kenji Saito

High Energy Accelerator Research Organization (KEK)
Accelerator Lab

Basic R&D for High Gradient SC Niobium Cavities in KEK L-band Group

Fabrication Method of High Gradient SC Cavities Eacc ~ 40MV/m

1) High pure niobium material RRR~200
2) Electropolishing (EP)
3) High Pressure Water Rinsing (HPR)
4) Baking (70~140°C)

Degradation Free Final Cavity Assembly Method

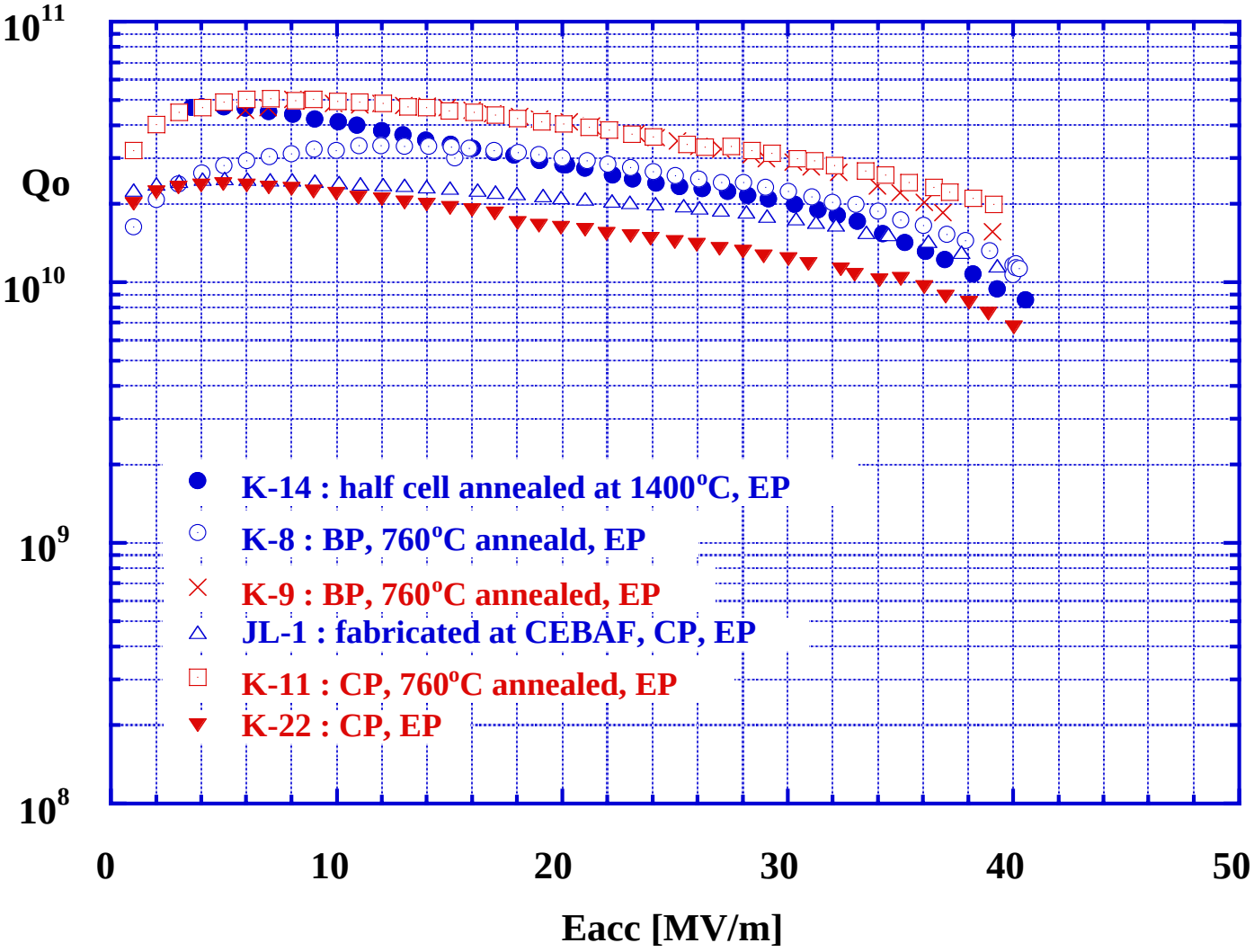
1) Opening vacuum with Argon Gas
2) Simple Aluminum Vacuum Sealing

Cost-Effective Cavity Production Method

Nb/Cu Clad Seamless Cavity

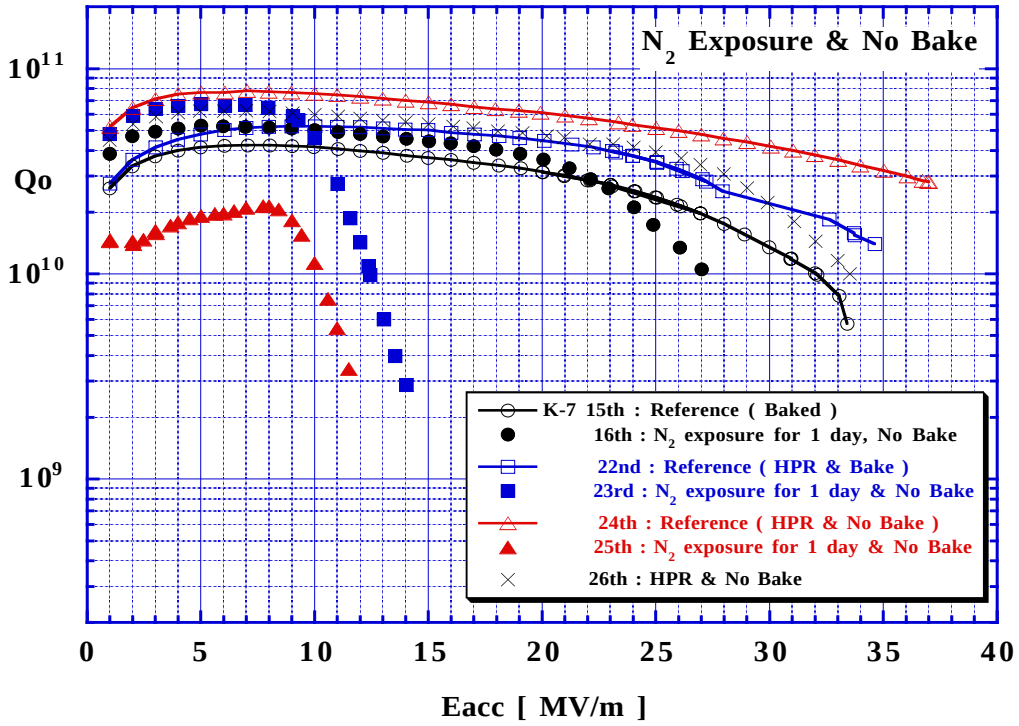
Cost-Effective & High Gradient & Highly Reliable SC Cavities

High Gradient SC cavity performance by electropolishing

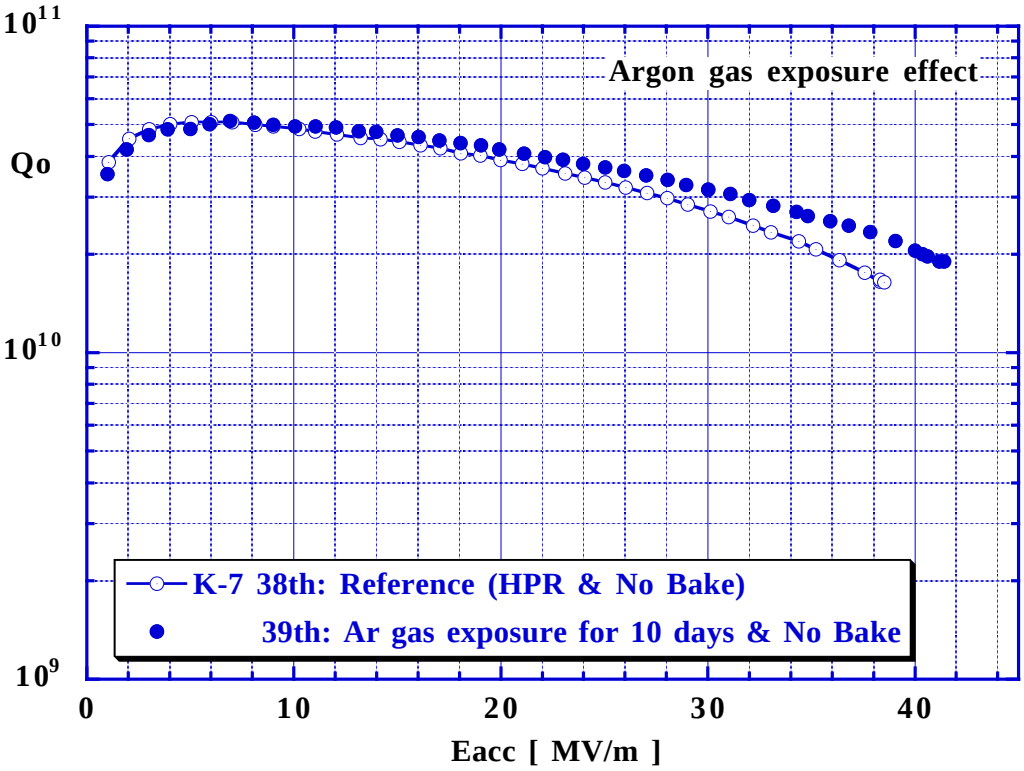


Degradation Free Cavity Final Assembly Method

Nitrogen Gas Exposure Effects

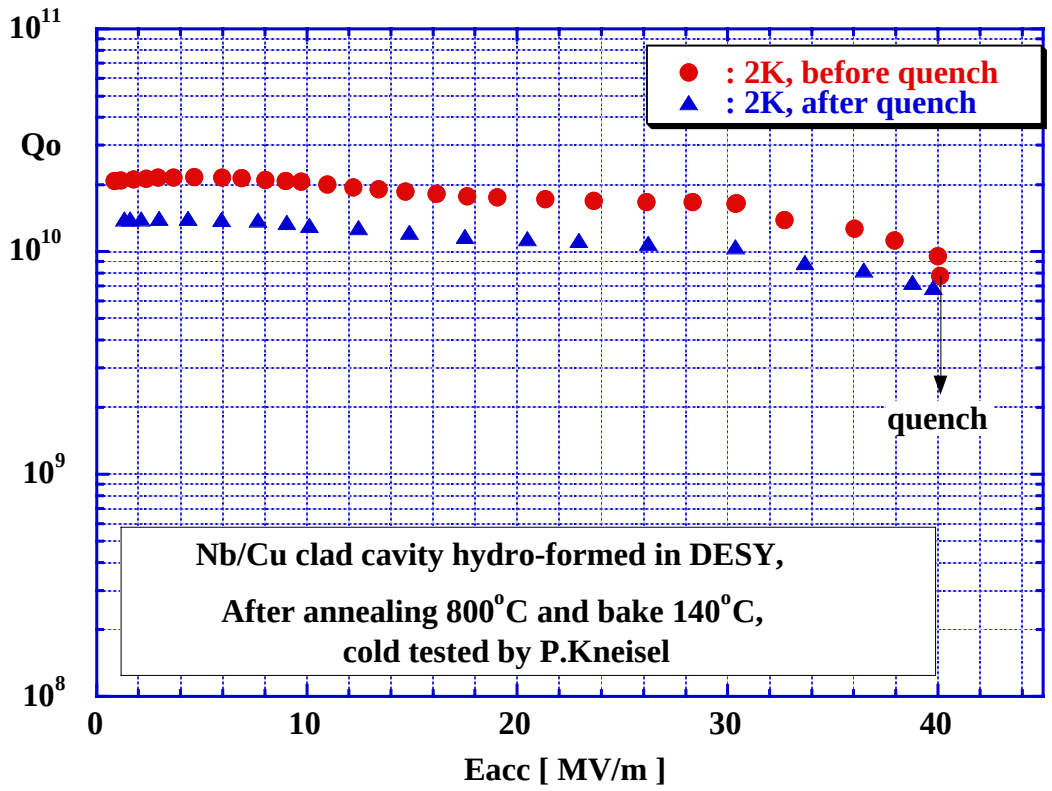


Argon Gas Exposure



Aluminum Simple Vacuum Sealing

Nb/Cu Clad Seamless Cavities

Hydro-formed by W.Singer at DESY

Excellent Cavity Performance of Nb/Cu Seamless