

thinfilms and NEW IDEAS for SRF

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Tunneling spectroscopy - correlations between superconducting properties and RF performances

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I will present recent analysis of tunneling spectroscopy data measured on cut out samples from a N doped cavity, and from commonly processed hot and cold spot regions of a BCP cavity. The hot spot samples reveal small gap area consistent with a proximity effect model along with spectroscopic signature of magnetic impurities, characteristic of two level systems. The cold and N doped samples on the contrary show near ideal BCS superconducting properties. From these results and complementary surface characterization technics we can draw general correlations between RF dissipation, inelastic scattering processes and gap values.

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