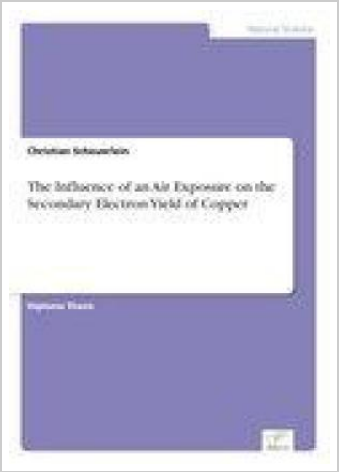

The Influence of an Air Exposure on the Secondary Electron Yield of Copper

By Christian Scheuerlein

Diplom.De Mai 2002, 2002. Taschenbuch. Book Condition: Neu. 210x148x5 mm. This item is printed on demand - Print on Demand Titel. Neuware - Diploma Thesis from the year 1997 in the subject Physics - Applied physics, grade: 1,0, University of Applied Sciences - Beuth (Verfahrens- und Umwelttechnik), language: English, abstract: Inhaltsangabe:Abstract: The influence of different air exposure times on the secondary electron emission of clean copper surfaces as well as on technical copper surfaces has been studied in the context of the phenomenon of multipacting, which can limit the performance of superconducting radio-frequency (RF) cavities for particle acceleration. The copper samples were prepared by heat treatments and in situ sputter-etching and they were investigated with a dedicated instrument for SEY measurements, by scanning electron microscopy (SEM), energy dispersive X-ray analysis (EDX), and by Auger electron spectroscopy (AES). After short air exposures of some seconds the maximum secondary electron yield dmax of clean copper is reduced from 1.3 to less than 1.2, due to the oxidation of the copper surface. Subsequent air exposure increases the secondary electron yield (SEY) until, after about 8 days exposure dmax is higher than 2. Clean copper samples were also exposed to the single gases present...

Reviews

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