

STUDIES ON THE ELECTRO-POLISHING PROCESS WITH NB SAMPLE PLATES AT KEK.

T. Saeki, KEK, Ibaraki;

W.A. Clemens, JLAB, Newport News, Virginia;

Y. Funahashi, KEK, Ibaraki;

R.L. Geng, JLAB, Newport News, Virginia;

H. Hayano, S. Kato, KEK, Ibaraki;

R. Manus, JLAB, Newport News, Virginia;

M. Nishiwaki, M. Sawabe., KEK, Ibaraki;

P.V. Tyagi, GUAS/AS, Ibaraki;

K. Ueno, K. Watanabe, KEK, Ibaraki

Abstract

In this article, two subjects would be described, the first subject is on the production of stains on the surface of Nb sample plates in Electro-polishing (EP) process and the second subject is on the development of defects/pits in the EP process on the surface of a Nb sample plate. Recently, some 9-cell cavities were treated with new EP acid at KEK and the performance of these cavities were limited by heavy field emissions. On the inside surface of these cavities, brown stains were observed. We made an effort to reproduce the brown stains on Nb sample plates with an EP setup in laboratory with varying the concentration of Niobium in the EP acid. We found that the brown stains would appear only when processed with new EP acid. In the second subject, we made artificial pits on the surface of a Nb-sample plate and observed the development of the pits after each step of 30um-EP process where 120um was removed in total by the EP process. This article describes these series EP-tests with Nb sample plates at KEK.

CONTRIBUTION NOT RECEIVED