

Thermal Analysis of Absorbers for the 3 GeV TPS

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To minimize the outgas from photon stimulated desorption and yield of photoelectrons, the crotch absorbers for the TPS electron storage ring will adopt normal incident synchrotron irradiation. The absorbers are directly machined the downstream part of aluminum bending chambers with cooling channels drilled inside to simplify the structure. A design of the ladder-shape crotch absorber for the aluminum chambers is considered to take the heat load from 3 GeV bending magnet light source. A program of the Finite Element Analysis (FEA) is applied to simulate the thermal stress and the thermal distribution for the absorbers. The results will be presented in this paper.

Keywords: TPS, light source, aluminum, crotch absorber, finite element analysis