VT-P005

Wake Field Effect from the Undulator Vacuum Chamber in PAL-XFEL

박용운

빔물리팀, 4세대 사업단, 포항가속기 연구소

Wake field effect on the electron beam from the undulator chamber in PAL-XFEL is analyzed. The wake field takeover some energy from the electron beam which will increase the energy spread of the electron beam. This will cause the degradation of the radiation power in PAL-XFEL. To decrease the effect, the surface of the undulator vacuum chamber should be fabricated with 200 nm surface roughness and 5 nm oxidation layer. In this presentation, the numerical calculation of the wake will be shown. Simulation results of the radiation generation in PAL-XFEL also will be presented.

Keywords: Wakefield, Surface roughness, Oxydation layer

VT-P006

Impedance Calculation for Vacuum Components in Pohang Light Source Storage Ring

주영도[1], 이병준[1], 손영욱[1], 유인하[1], 전명환[1], 박인수[1], 김승환[1], 하태균[1], 공형섭[1], 손윤규[1], 박용정[1], 박종도[1], 남상훈[2]

[1]Pohang Accelerator Laboratory, Pohang 790-784, [2]Korea Heavy Ion Medical Accelerator Project, Seoul 139-708 Korea

Broadband impedances for the 3-GeV pohang light source-II (PLS-II) storage ring have been numerically estimated using a full three dimensional finite-difference time-domain code, CST particle studio. The total broadband impedance of all the vacuum components was estimated as 0.256 ohm, which is a small fraction of the total machine impedance budget.

Keywords: Impedance, Vacuum component, Storage ring