

Pressure distribution of the SPS storage ring

Wednesday, May 20, 2015 2:00 PM (3h 30m)

Ultra-high vacuum is a key requirement that determines electron beam quality and lifetime for an electron accelerator complex. In operation of the Siam Photon Source (SPS), pressure distribution of storage ring has been monitored using a series of Cold Cathode Gauges (CCGs) installed in proximity to the vacuum pumps around the ring. Pressure between the CCGs was calculated based on the continuity principle of gas flow. Photon-stimulated gas desorption from synchrotron radiation was also taken into account. It was found that averaged pressure of the SPS storage ring is $\leq 1.0 \times 10^{-9}$ Torr, calculated at the beam current of 115 mA, the beam energy of 1.2 GeV and the photon dose of 2000 A·hr. Discussion will be made on the calculation results in comparison to the measured values. In addition, the latest results from three-dimensional simulation using Molflow will be presented.

Primary author: SUNWONG, Prapaiwan (Accelerator Technology Division, Synchrotron Light Research Institute (Public Organization) 111 University Avenue, Muang District, Nakhon Ratchasima, 30000 Thailand)

Co-authors: TONG-ON, Anusorn (Accelerator Technology Division, Synchrotron Light Research Institute (Public Organization) 111 University Avenue, Muang District, Nakhon Ratchasima, 30000 Thailand); JUNTONG, Nawin (Accelerator Technology Division, Synchrotron Light Research Institute (Public Organization) 111 University Avenue, Muang District, Nakhon Ratchasima, 30000 Thailand); BOONSUYA, Supan (Accelerator Technology Division, Synchrotron Light Research Institute (Public Organization) 111 University Avenue, Muang District, Nakhon Ratchasima, 30000 Thailand)

Presenter: SUNWONG, Prapaiwan (Accelerator Technology Division, Synchrotron Light Research Institute (Public Organization) 111 University Avenue, Muang District, Nakhon Ratchasima, 30000 Thailand)

Session Classification: Poster-1

Track Classification: Accelerators and Synchrotron Radiations