



Contribution ID: 776 Contribution code: THPG43

Type: **Poster Presentation**

Assessment of the ratios of radiation sources and total electron loss at the injection section of the Taiwan Photon Source facility and total electron loss by using neutron measurements

Thursday, 23 May 2024 16:00 (2 hours)

Radiation in the injection section of a synchrotron radiation facility is primarily the result of injection beam loss, which occurs each time the current is replenished, and storage beam loss, which accounts for the lifetime during routine operations. This study conducted neutron measurements by using high-sensitivity neutron detectors and obtained the total electron loss during the unfolding process. With the known lifetime, the ratio of injection beam loss to storage beam loss and the total loss in the injection section of the Taiwan Photon Source facility during routine operations were determined. The total electron loss at the measurement site was approximately five millionths of the full load current. The ratio of injection beam loss to storage beam loss was 1.64. The total electron loss was 0.44 pC, with 0.27 pC being attributed to injection beam loss and 0.17 pC being attributed to storage beam loss.

Footnotes

Funding Agency

Paper preparation format

Word

Region represented

Asia

Primary author: LIN, Yu-Chi (National Synchrotron Radiation Research Center)

Co-authors: WEN, Po-Jiun (National Synchrotron Radiation Research Center); CHEN, Chien-Rong (National Synchrotron Radiation Research Center); CHEN, Ang-Yu (National Synchrotron Radiation Research Center)

Presenter: LIN, Yu-Chi (National Synchrotron Radiation Research Center)

Session Classification: Thursday Poster Session

Track Classification: MC6: Beam Instrumentation, Controls, Feedback, and Operational Aspects:
MC6.T18 Radiation Monitoring and Safety