



Contribution ID: 62 Contribution code: TUP37

Type: **Poster Presentation**

Integrated system design of fluorescence detector and beam position monitor

Tuesday 16 September 2025 17:00 (1 hour)

This paper describes an integrated system combining a fluorescence detector and a beam position monitor to be implemented at the soft X-ray beamline of the Taiwan Photon Source (TPS) at the National Synchrotron Radiation Research Center (NSRRC). The system reduces production costs and features a more compact design. The TPS beamline is now in its third phase of development. According to user feedback, the fluorescence imaging design uses rear-side image capture in combination with a beam position monitor. This setup helps reduce stray light interference and improves the signal-to-noise ratio. The beam profile can be verified through image processing. The beam position monitors (BPMs) feature independently adjustable linear shift mechanism. The white beam section uses a coaxial heat dissipation system made of chromium-zirconium-copper alloy. This approach removes the need for brazing, reduces overall costs, and enhances both design and manufacturing efficiency. The BPM opening is adjustable within a range of 0 to 25 mm. The integrated system is expected to be deployed in multiple vacuum sections of the TPS 35A and TPS 43A beamlines in 2025.

Footnotes

Funding Agency

NSRRC

Author: LEE, Chang Sheng (National Synchrotron Radiation Research Center)

Co-authors: Dr CHUNG, Cheng-Ying (National Ilan University); LIN, Cheng-Yuan (National Synchrotron Radiation Research Center); Dr HUANG, Chi-Yi (National Synchrotron Radiation Research Center); Mr CHANG, Chien-Hung (National Synchrotron Radiation Research Center); Dr FUNG, Hok-Sum (National Synchrotron Radiation Research Center); Mr LEE, Ming-Han (National Synchrotron Radiation Research Center)

Presenter: Dr FUNG, Hok-Sum (National Synchrotron Radiation Research Center)

Session Classification: Tuesday Poster Session

Track Classification: BEAMLINES: Beamlines and Instruments