Contribution ID: **207** Contribution code: **WEO11** Type: **Contributed Oral Presentation**

# Development of magnet prototype for Siam Photon Source II

*Wednesday 17 September 2025 15:20 (20 minutes)*

The construction of Siam Photon Source II (SPS-II), Thailand's second synchrotron light source, represents a major advancement in the nation's scientific and technological infrastructure. Designed to produce high-intensity synchrotron radiation for a wide range of applications, the project necessitates the development of advanced accelerator components. This work presents the engineering design and prototyping of magnets for the storage ring, with a focus on the precise control of magnetic field, mechanical precision, and thermal stability. Finite element analysis was employed to simulate and optimize key parameters. The manufacturing process involved high-precision machining, quality control of material and vacuum pressure impregnation for coil insulation. Testing results confirmed agreement between the measured magnetic field and design specification. Notably, this marks the first domestic development of magnet prototype in Thailand, integrating multidisciplinary technical knowledge and expertise with industrial collaboration. This work constitutes a critical milestone in Thailand's magnet technology development and provides a solid foundation for the realization of SPS-II.

## Footnotes

## Funding Agency

Synchrotron Light Research Institute (Public Organization)

**Author:** PRAWANTA, Supachai (Synchrotron Light Research Institute)

**Co-authors:** SROISON, Meechok (Synchrotron Light Research Institute); THIABSI, Netchanok (Synchrotron Light Research Institute); NUMANOY, Pajeeraphorn (Synchrotron Light Research Institute); Mr CHAITHAWEEP, Phatthara (Synchrotron Light Research Institute); SUNWONG, Prapaiwan (Synchrotron Light Research Institute); LEETHA, thongchai (Synchrotron Light Research Institute)

**Presenter:** PRAWANTA, Supachai (Synchrotron Light Research Institute)

**Session Classification:** Accelerators Session 2

**Track Classification:** ACCELERATORS: Magnets