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Development status of the BPM system for the SPring-8-II storage ring

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We are developing a BPM system for the 6 GeV fourth-generation light source, SPring-8-II, which is a renewal of the third-generation light source, SPring-8. The new storage ring will be equipped with 340 button-type BPMs. BPM heads with molybdenum button electrodes have been designed to achieve the position sensitivity coefficients required for SPring-8-II as well as minimal beam impedance and heat dissipation. The BPM heads for the vacuum chambers of the prototype cell are currently being fabricated to validate the mechanical design. As for radiation-resistant signal cables, PEEK-insulated semi-rigid cables will be used for connection to the BPM head, and polyethylene-insulated corrugated cables relay from the girder side to the readout electronics. High-precision and stable readout electronics consist of RF front-end boards and high-speed digitizer boards based on the MTCA.4 standard. The initial batch of electronics has already been installed to replace the obsolete single-pass BPM system of the current SPring-8, and the performance evaluation is in progress. In this presentation, we will report the overview and the development status of the SPring-8-II BPM system.

Footnotes

Funding Agency

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Yes

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