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CPMU development at diamond light source

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Over the last three years (2020-2022) Diamond Light Source has installed four in-house designed, built, and measured Cryogenic Permanent Magnet Undulators (CPMUs). All four are 2 m long with a 17.6 mm period and have a minimum operating gap of 4 mm. These have replaced existing 2 m long in-vacuum pure permanent magnet (PPM) devices to improve the flux to several of Diamond's MX (Macromolecular Crystallography) beamlines by a factor of 2-4. In this paper we present the mechanical and cryogenic design considerations, and the shimming procedures and tools developed to produce these devices. The performance of the CPMUs compared to their PPM counterparts will also be reviewed.

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Footnotes

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Yes

Primary author: SHARMA, Geetanjali (Diamond Light Source Ltd)

Co-authors: GEORGE, Angela (Diamond Light Source Ltd); HALE, Stephen (Diamond Light Source Ltd); MARZIANI, Marco (Diamond Light Source Ltd); MERCADO, Ronaldo (Diamond Light Source Ltd); PATEL, Zena (Diamond Light Source Ltd); Dr RAMEZANI MOGHADDAM, Ali (Diamond Light Source Ltd); REEVES, Martin (Diamond Light Source Ltd); TRIPATHI, Sumit (Diamond Light Source Ltd)

Presenter: SHARMA, Geetanjali (Diamond Light Source Ltd)

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