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Conceptual design of a super bend dipole magnet as a high-field radiation source for the ILSF storage ring

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The Iranian Light Source Facility (ILSF) is in the detailed design phase. It will operate at 3 GeV and 400 mA with an ultra-low horizontal emittance of 0.27 nm. rad. The main storage ring combined dipole magnet has a 0.56 T magnetic field and a -7 T/m gradient. It can serve as a soft X-ray source, and there are several ways to achieve hard X-rays; one is to use a high-field dipole. It is designed with a permanent magnet and consists of three parts; a high field part that provides a 3 T magnetic field and two low field parts on either side of the high field one. The basic design of the super-bend dipole magnet is presented here.

Funding Agency

Footnotes

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Yes

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