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## Design of magnets for Hefei advanced light facility

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The Hefei Advanced Light Facility (HALF) is a future soft X-ray diffraction-limited storage ring at National Synchrotron Radiation Laboratory (NSRL), which aims to decrease the horizontal emittance to improve the brilliance and coherence of the soft X-ray beams. The lattice of the ring depends on the use of many short and high field multipole magnets, dipole-quadrupole magnets with high gradients (DQ) and dipoles with longitudinal gradients (DL). Due to the high gradient of DQs, it is a better choice to obtain the ideal field with an offset quadrupole design. The longitudinal gradient dipoles are electromagnets with different gaps for the requirement of the field adjustment. The design of all multipole magnets relies on a new optimization method based on NSGAI and the good results have been achieved. The design has been completed and the prototype of DL2 is under construction.

### Funding Agency

### Footnotes

### I have read and accept the Privacy Policy Statement

Yes

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