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Superconducting magnet system for HIAF

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The High Intensity Heavy-ion Accelerator Facility (HIAF) is a new project under construction in China, which will provide beams of stable and unstable heavy ions with high energies, high intensities and high quality. This paper discusses the superconducting magnet system for this accelerator complexes. It will consist of a Nb₃Sn magnet with the peak field of 12 Tesla for the ECR ion source operated at 45 GHz, 96 solenoids typically 676 mm long with an operating field of 7.5 Tesla for the superconducting Linac called iLinac, 11 superferric dipoles with 320 mm wide good field region, 13 coil-dominated multiplets with an aperture of 320 mm, gradient 11 T/m for the fragment separator HFRS, and 20 dipoles integrated with quadrupoles and sextupoles with the central field of 3 Tesla for the spectrometer ring called SRing. This papers reports the design and prototype development status of the main components.

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