

a Design for High-field MRI Main Magnet Based on the Low Temperature Stability of NbTi Superconducting Wire

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Some theoretical analysis on the low-temperature stability of NbTi superconducting wire in high magnetic fields has been done in this paper, and we got some appropriate choices of high-field NbTi superconducting wire. The distribution of the magnetic field within superconducting coils used for NbTi superconducting wire selected, the idea of Layered coil physical structure for the high-field MRI main magnet design is proposed; Effective control of the maximum magnetic field strength and high-field NbTi superconducting wire usage, the main magnet manufacturing cost savings; Application of this idea, the design of a 9.4T human MRI superconducting magnets of the electromagnetic structure will be introduced.