

**EPAC 2006 Abstract** [Ramesh C. Gupta](#) [Logout](#) [Home](#) [Search](#) [My Schedule](#)**Title** **Low and Medium Field HTS Magnets for Accelerator and Beam Lines****Submitted** 14-JAN-06 02:41 (UTC)**Classification** 07 Accelerator Technology**Modified** 17-JAN-06 09:38 (UTC)**Session****Presentation** Poster**Presenter** Ramesh C. Gupta**Paper ID****Author(s)** Ramesh C. Gupta, Michael Anerella, Michael Harrison, William Sampson, Jesse Schmalzle (BNL, Upton, Long Island, New York)

**Abstract** This paper will present a summary of low and medium field High Temperature Superconductor (HTS) magnet R&D at Brookhaven National Laboratory (BNL). A number of these magnets are being investigated for diverse applications. These include dipoles, quadrupoles, combined function magnets, solenoids and helical wigglers. The main challenge is to develop designs and construction techniques so that these HTS magnets can compete with water-cooled room temperature copper magnets in terms of cost of ownership (construction + operation). In addition, the Superconducting Magnet Division at BNL has been carrying out the development of a super-ferric HTS quadrupole for the proposed Rare Isotope Accelerator project. This magnet would be subjected to extremely high radiation loads (~15 kW). It is designed operate at 30-40 K to remove this heat load economically. The construction and test results of this magnetic mirror quadrupole, including the simulation of these large heat loads will be presented.

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**Footnote**

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