

**Study of the Magnetic Bearing Consisting of Coupling of Superconductors
Applicable to the Support Bearing of Flywheel Energy Storage System**

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The RTRI conducted a development on superconducting magnetic bearing applicable to the flywheel energy-storage system for railways. In this study, high temperature bulk superconductor (HTS bulk) was combined with superconducting coils to increase the load capacity of the bearing. The flywheel energy-storage system has high energy density, and is excellent in the start/stop operation and the load response. Nevertheless, there are problems in terms of durability and economical aspects. The study has intended to improve the driving efficiency by decrease in the frictional loss and to solve the problems concerning the maintenance by applying the superconducting technology to the bearing part. In this paper, we have reported the basic study of magnetic bearing consisting of coupling of superconductors applicable to the support bearing of flywheel energy storage system.