Electrical and Mechanical Property Tests of Superconducting Traction Transformer for Railway Rolling Stock

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We are developing a light weight and high efficiency superconducting traction transformer for railway rolling stock. We performed a conceptual design for optimization, and fabricated and tested high-Tc superconducting coils that simulate windings, and other components. Then we designed and fabricated a prototype superconducting traction transformer to be installed on the floor for Shinkansen rolling stock. In this study report, results of tests such as type test, system test and vibration test are presented. The type test which confirms basic electrical characteristics is performed based on JIS-E5007. In the system test, the transformer is tested by dynamic simulator for rolling stock. The vibration test is performed in accordance with JIS-E4031.