

Stabilizer-free 초전도 선재를 이용한 한류 소자 제작 및 특성 시험

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Fabrication and characterization of fault current limiting devices made of stabilizer-free coated conductors

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Abstract : For the application of superconducting wires to fault current limiting devices, it is required that they have a high rated voltage when a fault occurs. Stabilizer-free coated conductors, particularly, shows a good performance for the high rated voltage, which is beyond 0.6 V/cm. In this study, using the stabilizer-free coated conductors, we made fault current limiting devices and examined their characteristics. Fault current limiting devices were fabricated with a shape of the cylinder of a mono-filar coil winding. Stabilizer-free coated conductors were wound along the mono-filar coil line and the terminal parts between the wire and metal were soldered using In solder. Two kinds of devices were fabricated by a different method in the terminal joint, one was made by a soldering and the other was made by a soldering-free joint. Critical currents and resistance at the joint parts were measured. In addition, long-time current flowing tests were also carried out for the characterization of the fault current limiting devices.

Key Words : fault current limiting device, soldering method, stabilizer-free coated conductor

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