



MT 26
International Conference
on Magnet Technology
Vancouver, Canada | 2019

Contribution ID: 1542

Type: **Poster Presentation**

Tue-Af-Po2.16-09 [23]: Superconducting transformer for superconducting cable research and development

Tuesday 24 September 2019 14:00 (2 hours)

Abstract

A facility capable of testing superconducting cables with current of tens of kA is essential for the development of large superconducting magnets. A superconducting transformer (SCT) is a suitable choice as a high DC current source for testing superconducting cables. In this work, we will present our experimental results of a SCT that was originally developed by Lawrence Berkeley National Laboratory to reach a maximum output current of 50 kA. The SCT is characterized first at 4.2 K in zero magnetic field. Its behaviors during a sample quench at different current levels is studied. We will also present its performances in high magnetic field measured on a SC cable in a 12 T split magnet at the National High Magnetic Field Laboratory.

Acknowledgement

We thank Mr. Eric Stiers for helps on electronic control. This work is supported by the user collaboration grant program (UCGP of the NHMFL which is supported by NSF through NSF-DMR-1157490 and 1644779, and the State of Florida.

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Session Classification: Tue-Af-Po2.16 - Power Supplies and Flux Pumps II: Transformers