



Contribution ID: 398 Contribution code: TUE-PO1-513-09

Type: Poster

## Investigation of HTS Power Devices Cooled by LN<sub>2</sub>/CF<sub>4</sub> Mixture

*Tuesday, 16 November 2021 13:15 (20 minutes)*

LN<sub>2</sub>/CF<sub>4</sub> mixture would be an effective coolant and insulating medium of high-temperature superconducting (HTS) magnets and power devices, which could provide a cryogenic environment in the temperature range of 50 to 100 K and serve as a liquid dielectric. In this paper, recent progress concerning the LN<sub>2</sub>/CF<sub>4</sub>-cooled HTS power devices including superconducting fault current limiter (SFCL) and superconducting magnetic energy storage (SMES) is presented with the emphasis focused on their improved electromagnetic characteristics and thermal stability compared with those devices immersed in liquid nitrogen. In addition, the characteristics of SFCL and SMES prototypes immersed in the LN<sub>2</sub>/CF<sub>4</sub> mixture are further analyzed from the aspect of thermal and electrical properties of LN<sub>2</sub>/CF<sub>4</sub> medium.

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**Session Classification:** TUE-PO1-513 SMES, Transformers, Wireless Power Transfer