



Contribution ID: 416

Type: **not specified**

P4.080 A 15kA solid circuit breaker for the switch network unit of the EAST Tokamak

Thursday, 20 September 2018 11:00 (2 hours)

This paper describes the development and testing of a 15 kA Solid Circuit Breaker (SCB) applied to the Switch Network Unit (SNU) of the Experimental Advanced Superconducting Tokamak (EAST). The circuit scheme composed of parallel connected integrated gate-commutated thyristors (IGCT) and the diode bridge to realize bidirectional breaker ability is presented firstly. In this paper, the stray inductances of the bus bars and the heat sinks for the current sharing of each IGCT are considered in detail. Through Ansys Q3D parameters extraction, the influence of structure stray parameters on the current sharing of power device in parallel is analyzed. Finally, the operation of the SCB has been successfully tested up to the current of 15 kA and the maximum interruption voltage of about 2.4 kV, these experiment results confirmed the current balance of the parallel-connected devices and the reliability of the SCB during current conduction and current commutation processes.

Presenter: WANG, Shusheng (University of Science and Technology of China)

Session Classification: P4