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Tue-Mo-Po2.09-09 [71]: Performance Degradation of YBCO Tape Under Overcurrent Considering Different Heat Exchange Conditions

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The performance degradation of High Temperature Superconducting (HTS) tape, which may be influenced by various heat exchange conditions due to device structure, is of significant for life assessment of HTS devices under repetitive overcurrent. In this paper, considering stabilizing layer materials and heat exchange conditions, a series of repetitive overcurrent experiments were carried on YBCO tapes under 50Hz sinusoidal alternating current. The degradation of critical current of YBCO tapes after repetitive overcurrent was recorded. After comparing the performance degradation of tapes, the internal mechanism that each factor influences the degradation was analyzed and the key factor was obtained. The research could provide a reference for the design and life assessment of HTS devices.

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