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## **Fri-Mo-Po.08-07: Characterization of Critical Currents and Validation of REBCO Tapes with Micro-bridges Using Pulsed Current Measurements**

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High-temperature superconducting tapes, such as REBCO, are anticipated to be used in ultra-high field magnets (40 T), fusion reactors, and particle accelerators. Significant progress has been made in enhancing the critical current of REBCO tapes by introducing pinning centers. At 4.2 K, the critical current of 4 mm wide tapes can reach thousands of amperes. However, accurately measuring the critical current in these tapes is challenging due to the heating of current leads and cooling limitations. To address this, we have developed a method using pulsed currents to measure critical currents with a maximum output of 30 A. A 2 ms trapezoidal pulse was applied to the sample, and the voltage was recorded using a DMM7510 with a high sampling rate. To reduce the required current for testing, microbridges of varying widths were etched onto the samples. The critical current of the tapes with micro-bridges was measured at 77 K in a self-field configuration, with corrections based on previous studies of the microbridge structures. The critical current characteristics of REBCO tapes with micro-bridges were compared under both pulsed and steady-state current conditions, showing that they are effectively equivalent.

**Author:** YUAN, Qi (Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology)

**Co-authors:** ZHANG, Hao (Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology); ZHOU, Linjie (Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology); SONG, Xiaowei (Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology)

**Presenter:** YUAN, Qi (Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology)

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