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Wed-Af-Po.05-04: Repairing Defects in 2G High-Temperature Superconducting Tapes Using REBCO Repair Patch

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This study presents a method for addressing defects in 2G high-temperature superconducting tapes using the REBCO Repair Patch (RRP) and analyzes its effects on performance enhancement. The main focus of the research includes an analysis of defect cases in the tapes and an experimental evaluation of performance improvements after the installation of the patch on defective tapes. Experiments were conducted on bare tapes, defective tapes, and samples after installation of the repair solution, using 2G tapes from SuNAM. A comprehensive analysis of the primary defect factors and a detailed explanation of the installation method are provided, along with experimental results demonstrating the effectiveness of the RRP in resolving defects. This research is expected to contribute to improving the reliability of high-temperature superconducting tapes and is anticipated to be useful in addressing defects found during the winding process when applying the results obtained from tape-level experiments to coil-level applications.

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