

Supporting Information

A Sulfurization method for creating the buffer-layers Current Flow Diverter architecture in REBa₂Cu₃O₇ coated conductors

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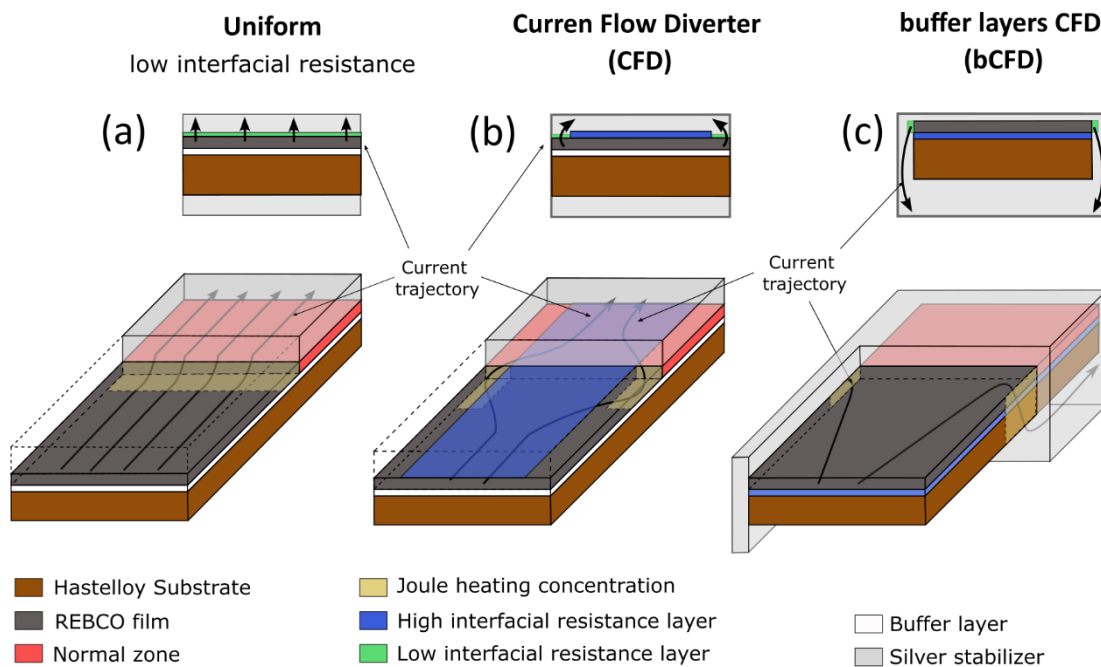


Figure S1: Schematic drawing of the path taken by the current when flowing from the superconductor layer to the metallic stabilizer in the presence of a normal zone. **Left:** tape with a uniform interfacial resistance; **Center:** tape with the CFD architecture; **Right:** tape with the buffer-layers-CFD (bCFD) architecture.

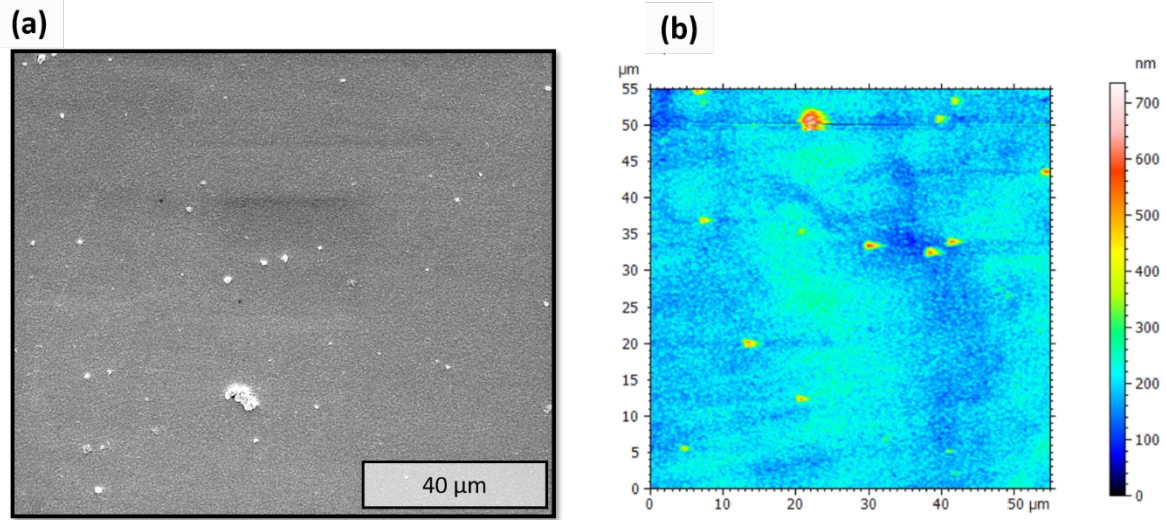


Figure S2: Evaluation of the GdBCO outgrowth peaks on the surface of the GdBCO substrate. (a) Secondary Electrons - SE image of the GdBCO film with a perpendicular view. (b) 55 x 55 μm atomic force microscopy (AFM) topography on the surface of the GdBCo film. The AFM data was compensated with the 3-point plane method using the Mountains Software. The peaks cover approximately 1% of the surface.

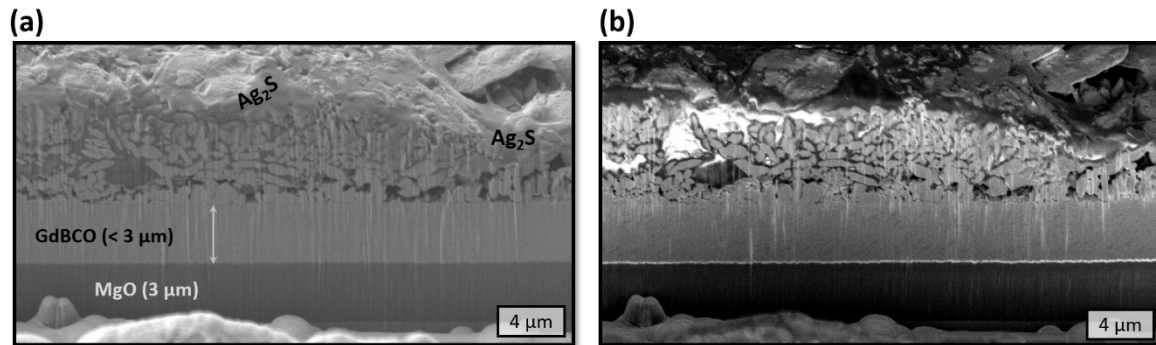


Figure S3: SEM-FIB images of the cross-section of the layers Ag₂S/HTS/MgO of a tape sample treated with sulfur gas for more than four hours. (a) Secondary Electrons – SE image of the cross-section. (b) Backscatterer Electrons – BE image of the cross-section. The final Ag₂S is rough, flaky, and gives no mechanical structure as a stabilizer layer.