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Supporting Information

A Sulfurization method for creating the buffer-layers Current Flow Diverter architecture in $REBa_2Cu_3O_7$ coated conductors

P. Barusco[1*], J. Giguère[2], C. Lacroix[2], F. Sirois[2], X. Granados[1], T. Puig[1], X. Obradors[1*]

1. Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus de la UAB, 08193 Bellaterra, Catalonia, Spain
2. Polytechnique Montréal, 2500 Chemin de Polytechnique, Montréal QC, H3T 1J4, Canada

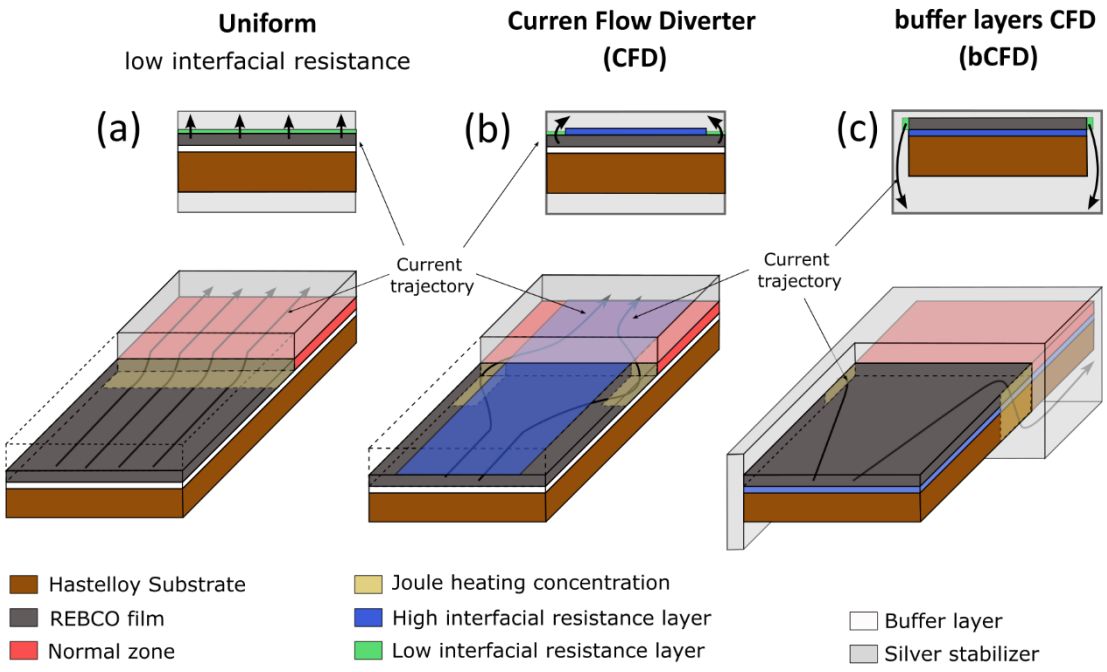

***Figure S1**: Schematic drawing of the path taken by the current when flowing from the superconductor layer to the metallic stabilizer in the presence of a normal zone. **Left**: tape with a uniform interfacial resistance; **Center**: tape with the CFD architecture; **Right:** tape with the buffer-layers-CFD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

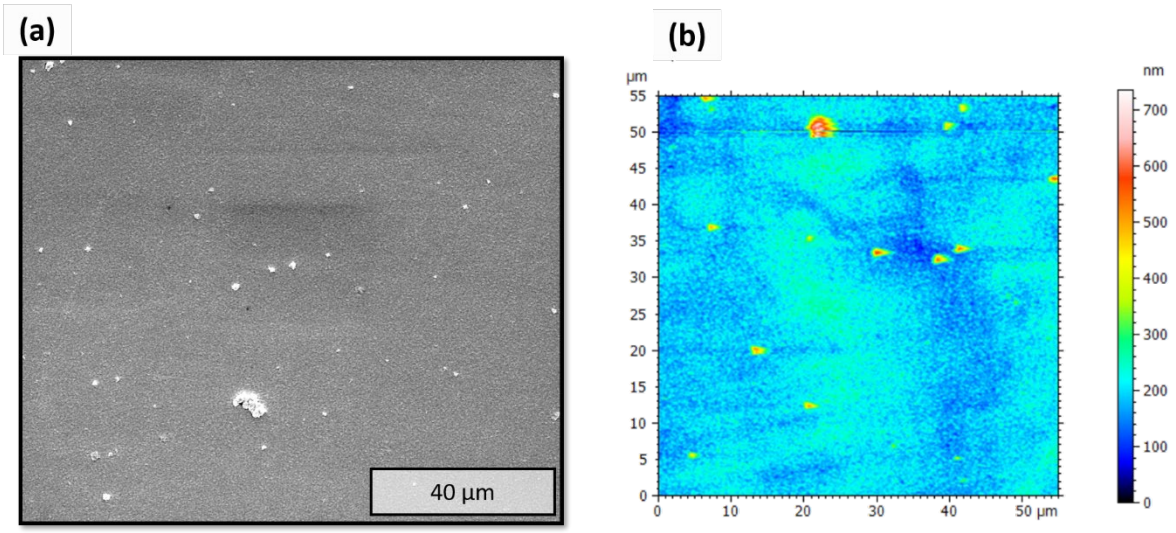

***Figure S2**: Evaluation of the GdBCO outgrowth peaks on the surface of the GdBCO substrate. (a) Secondary Electrons - SE image of the GdBCO film with a perpendicular view. (b) 55 x 55 um atomic force microscopy (AFM) topography on the surface of the GdBCo film. The AFM data was compensated with the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

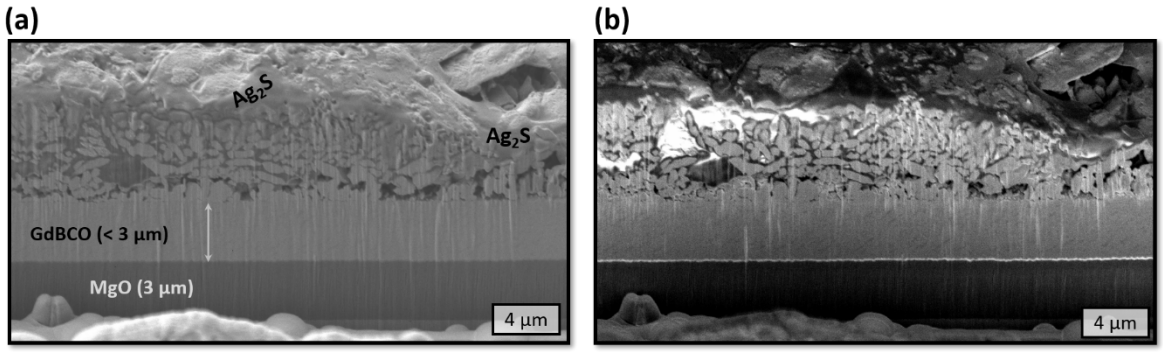

***Figure S3**: SEM-FIB images of the cross-section of the layers Ag2S/HTS/MgO of a tape sample treated with sulfur gas for more than four hours. (a) Secondary Electrons – SE image of the cross-section. (b) Backscatter Electrons – BE image of the cross-section. The final Ag_2S is rough, flaky, and gives no mechanical structure as a stabilizer layer.*