

Article

Effect of Silver Doping on the Superconducting and Structural Properties of YBCO Films Grown by PLD on Different Templates

Ilya A. Shipulin ^{1,2,*}, Aleena Anna Thomas ^{1,2}, Sigrid Holleis ³, Michael Eisterer ³, Kornelius Nielsch ^{1,4,5} and Ruben Hühne ¹

¹ Institute for Metallic Materials, Leibniz-IFW Dresden, 01069 Dresden, Germany

² School of Science, TU Dresden, 01062 Dresden, Germany

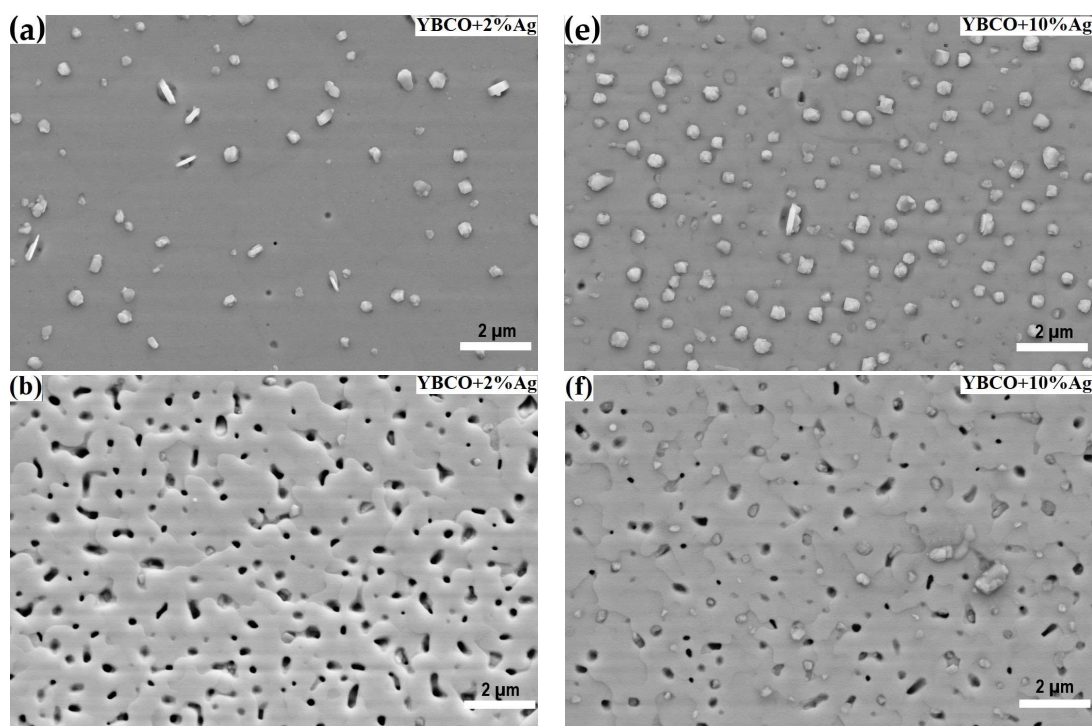
³ Atominstitut, TU Wien, Stadionallee 2, 1020 Vienna, Austria

⁴ Institute of Materials Science, TU Dresden, 01062 Dresden, Germany

⁵ Institute of Applied Physics, TU Dresden, 01062 Dresden, Germany

* Correspondence: i.shipulin@ifw-dresden.de or shipuliniliya@gmail.com

Surface morphology



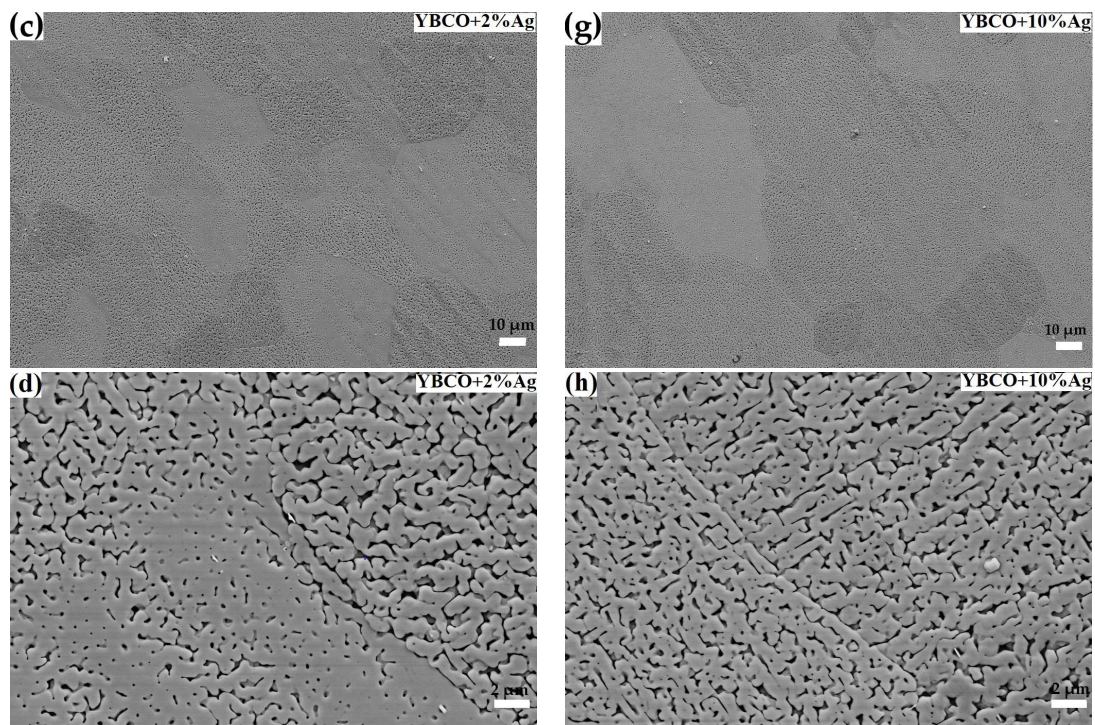


Figure S1. SEM images of the undoped and Ag-doped YBCO films on (a), (e) – STO, (b), (f) – IBAD-MgO, and (c,g), (d,h) – RABiTS templates.

EBSD measurements

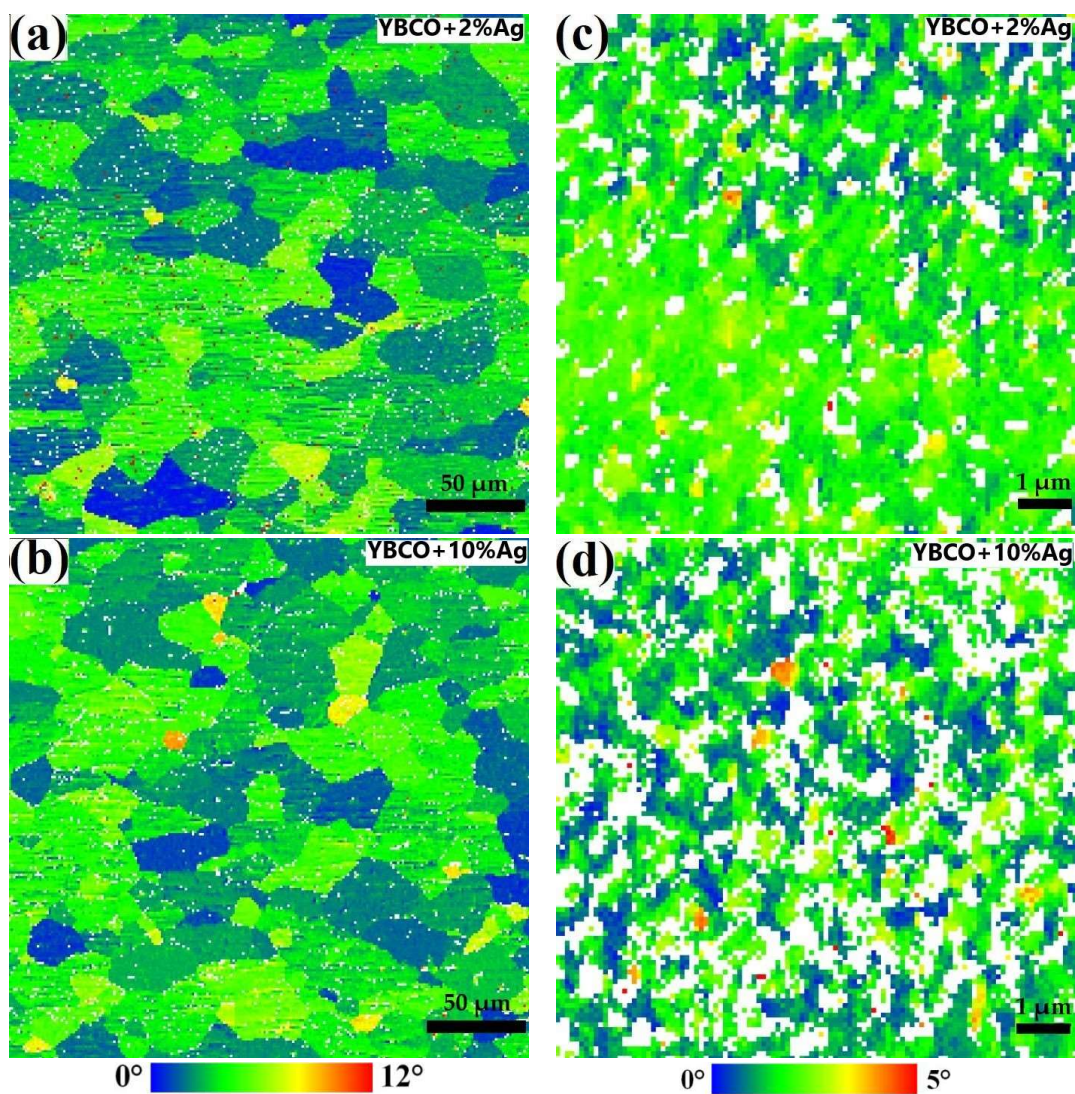


Figure S2. EBSD maps of the absolute misorientation from the ideal cube texture without noise reduction for undoped and Ag-doped YBCO films on (a-b) – RABiTS (step size 1.0 μm) and (c-d) – IBAD-MgO (step size 0.02 μm). White dots are non-indexed areas.

Transport properties

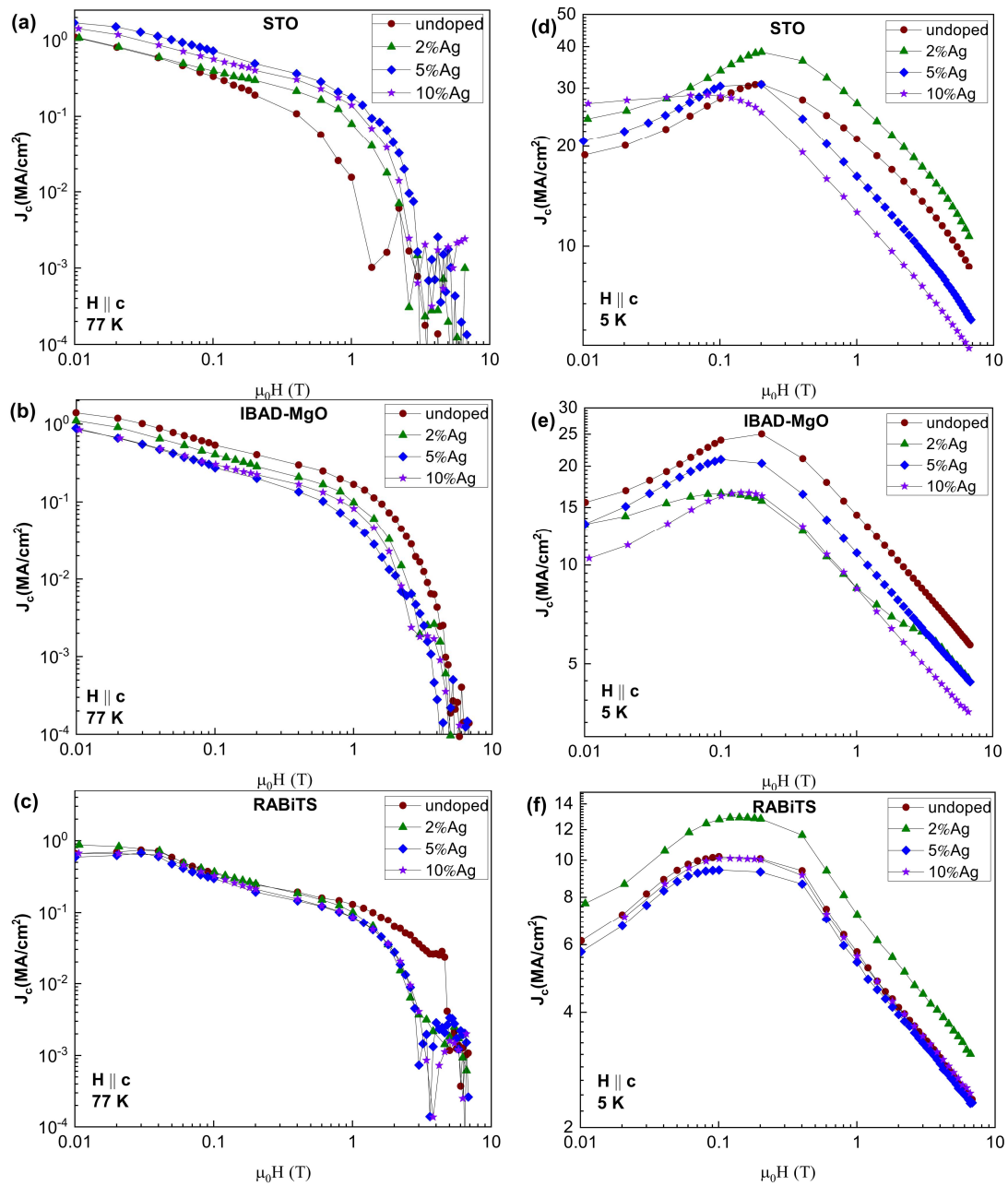


Figure S3. Dependence of the critical current density J_c on: (a–c) temperature and (d–f) magnetic field for undoped and Ag-doped YBCO films deposited on the different templates.

SHPM measurements

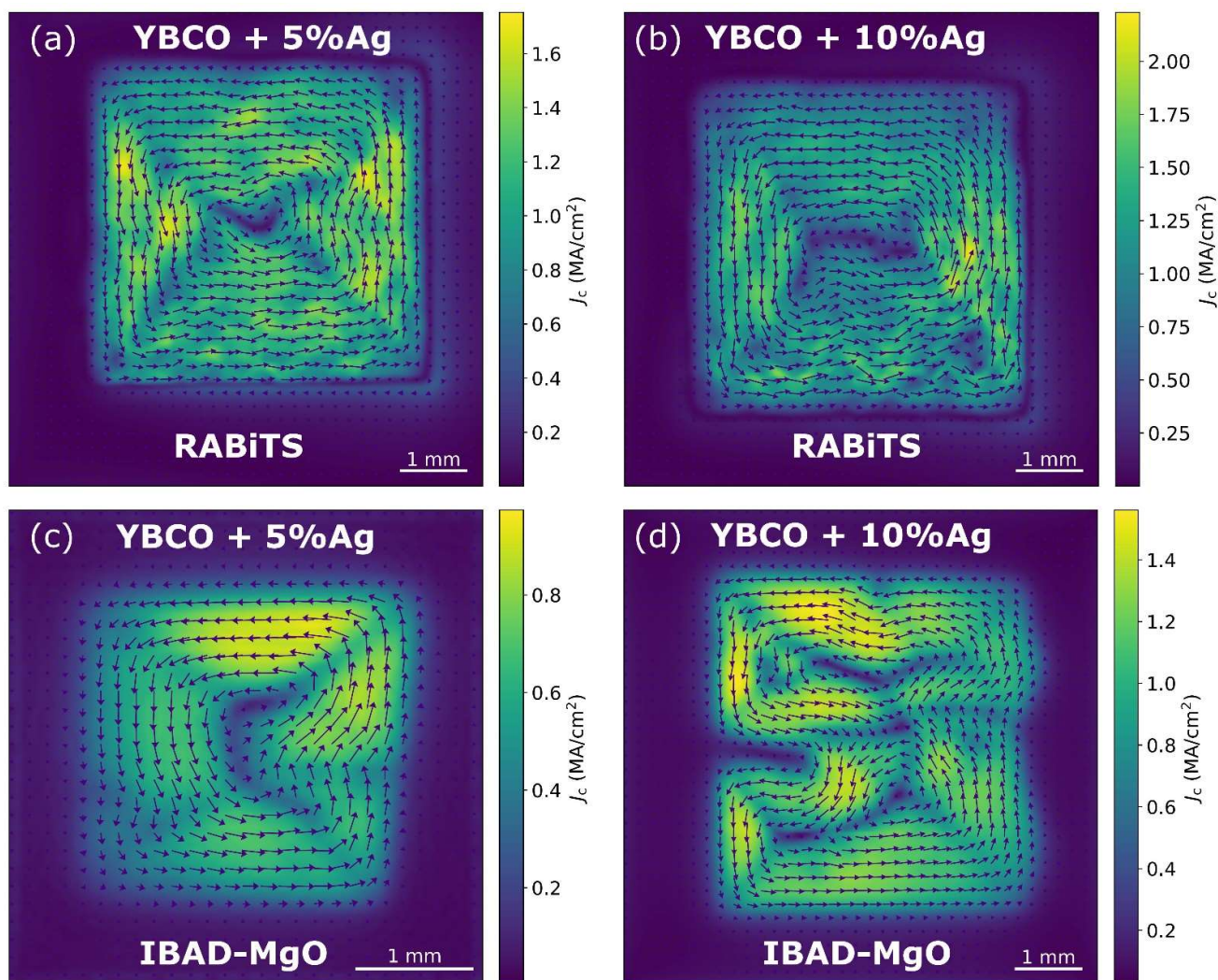


Figure S4. Local critical current density distribution of the undoped and Ag-doped YBCO films calculated from SHPM maps on: (a-b) RABiTS and (c-d) IBAD-MgO.