

# Melt Infiltrated/textured $\text{YBa}_2\text{Cu}_3\text{O}_y$ bulks with artificially patterned holes : a new way of processing c-axis FCL meander

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**Abstract :**  $\text{YBa}_2\text{Cu}_3\text{O}_y$  bulk materials were textured with artificially patterned holes namely “perforated structure”. This structure is applied to both conventional top seeded samples and melt infiltrated samples. The goal is to facilitate sample oxygenation and decrease crack formation in order to address the problem of hot spot formation in fault current **limiter (FCL)** applications. YBCO powder enriched with  $\text{CeO}_2$  and  $\text{SnO}_2$  is used for the conventional melt processing whereas **doping species** are not needed for infiltration techniques. As-processed samples contain mechanically **patterned** holes parallel to the **mean** c-axis of the textured domain. This makes samples easier to oxygenate and cool. The microstructure is not distorted in the vicinity of the hole. The single domain **character of the sample is evidenced** by XRD pole figure investigations. Meander tracks were prepared by drilling upper and lower surfaces of **the** samples. Hole containing samples still trap high fields, comparable with samples without holes.  $J_c$  are increased in samples with holes.

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