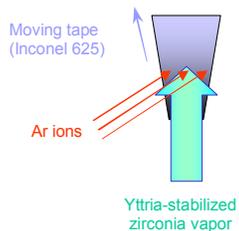


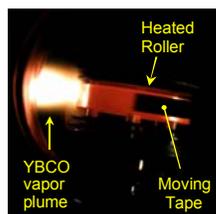
Intergrain J_c Increases in YBCO Tapes with Elevated Temperature Proton Irradiation

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Ion Beam Assisted Deposition produces a textured YSZ layer on a polycrystalline base tape



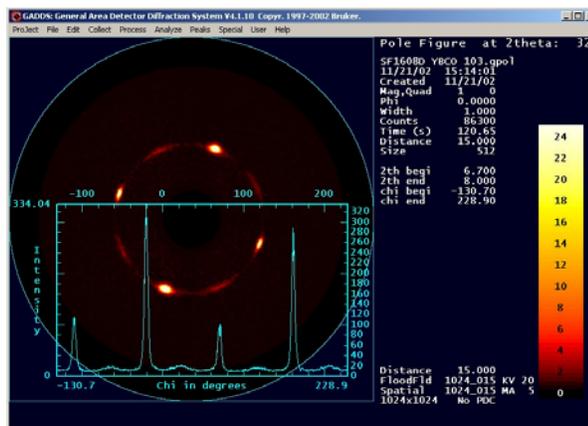
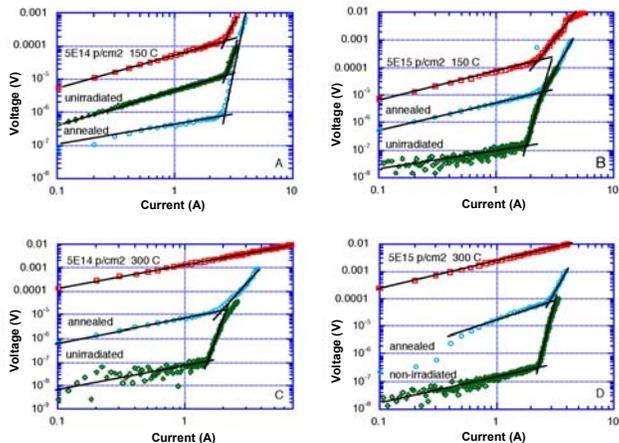
Pulsed Laser Deposition is used for epitaxial growth of YBCO on the heated tape



YBCO PLD/IBAD thick films, already with high J_c (1 MA/cm² at 77 K) and low grain misorientations (5°), were proton (9 MeV) irradiated at 150° and 300°C, and annealed at 500°C in oxygen.

Transport J_c increases (30-40%) measured.

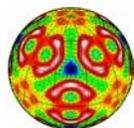
Decreases (10%) in YBCO grain misorientations measured by x-ray pole figures



CONCLUSIONS

Proton irradiations at elevated temperatures, designed to improve weak-link dominated transport J_c in thick-film textured YBCO, showed moderate improvements, with decreases in grain misorientations consistent with improved transport J_c , and with low induced radioactivity.

E. Ibragimova et al, MRS Symp. S, Dec. 2002.



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