Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad – 500 046

Internal Seminar

Studies on the role of nano-additives for microstructure and Flux pinning in BSCCO superconductor composites

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$(Bi,Pb)_2Sr_2Ca_{n-1}Cu_nO_{2n+4}$ (BSCCO) superconductors exhibit high flux creep and to control it, defects of the size of coherence length are introduced to the superconducting matrix. Achieving optimised microstructures with secondary phase precipitates uniformly dispersed throughout the BSCCO superconducting matrix has posed a persistent challenge compared to Y-Ba-Cu-O superconductors. To address this challenge, our research focuses on BSCCO composites incorporating various nano additives (WO_3, ZrO_2, and (Ca,Sr)CuO phase), resulting in effective control of flux creep up to temperatures as high as 77 K.

Monday, May 20th 2024

14:30 Hrs

CR-1, TIFR-H