

Abstract Submitted
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Synthesis and vortex dynamics of high-Tc superconducting nanoribbons with a periodic array of holes QIONG LUO, MICHAEL LATIMER, ZHILI XIAO, Northern Illinois University, LEI FANG, WAI-KWONG KWOK, Argonne National Lab — We fabricated nanoribbons of high-temperature superconductors YBCO-123 and BSCCO-2212. Experimental procedures for growing, manipulating and characterizing the nanoribbons will be presented. Furthermore, we introduced regular arrays of nanoscale holes into these nanoribbons through focused-ion-beam (FIB) milling to study the effects of periodic pinning on vortex dynamics. Resistive measurements reveal vortex matching effect and striking feature in the voltage-current behavior associated with various driven regimes of the vortex matter related to vortex dynamics phase transitions

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