

Abstract Submitted
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Optical properties of YBa₂Cu₃O₇ films deposited on SrTiO₃ bi-crystal substrate¹ MARÍA A. NAVACERRADA, U. Complutense/SJSU, JUANA V. ACRIVOS, HIZAM SAHIBUDEEN, SJSU, JEFFREY KORTRIGHT, PANNU NACHIMUTHU, LBNL-ALS, U. COMPLUTENSE COLLABORATION, SJSU COLLABORATION, LBNL-ALS COLLABORATION — Thin films (epitaxially grown by high pressure pure oxygen dc sputtering on bi-crystal substrates with a symmetrical tilt angle of 24°) showing a critical temperatures for superconductivity of 90 ± 1 K, have been investigated at stations 6.3.2/1 ALS near the O K-edge across the grain boundary (GB). The film [001] enhanced scattering, total electron yield and fluorescence were measured with predominantly horizontal plane, linearly polarized incident radiation, between 525 to 535 eV. Previous experiments on single crystals show spectra composed of two main peaks with a relative intensity dependent on orientation. The film a-b axes change their orientation with respect to the beam from one side of GB to the other. Not all the intensity changes observed when moving across the GB can be explained based on previous single crystal results. The geometry of the sample as well as the magnetic order associated with the superconductor are important factors to be considered.

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