

Abstract Submitted
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Pulsed laser growth and superfluid density measurement of underdoped $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+x}$ films JIE YONG, Department of physics, the Ohio State University, AMIT KANIGEL, Department of Physics, Technion - Israel Institute of Technology, Haifa 32000, Israel, SONG WANG, LI-WEI HUNG, THOMAS LEMBERGER, Department of physics, the Ohio State University — Underdoped $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+x}$ thin films are made by pulsed laser deposition on MgO and LaAlO_3 substrates. By reducing oxygen deposition pressure and postannealing, T_c as low as 6K is achieved. Superfluid density of these films is measured by mutual inductance of a two coil apparatus. T_c is much higher than the one given by 2D Kosterlitz-Thouless-Berezinskii transition temperature calculated for individual CuO_2 bilayers. Scaling of T_c with superfluid density will be compared with our previous 2D and 3D YBCO films.

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