

Abstract Submitted
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T_c and Upper Critical Field Slopes of Nb/Cr Bilayers AMY DAVIS,
PHILLIP BROUSSARD, Covenant College — We studied various superconducting
properties of SC/AF bilayer films using Nb and Cr, observing the changes as the
thicknesses of each metal was varied (Nb was held at 51 nm as Cr ranged from 5
to 100 nm, Cr was held at 50 nm as Nb was varied from 5 to 125 nm). These were
grown by DC magnetron sputtering onto (100) oriented Si substrates. The samples
were then attached to wires and cooled in a different vacuum chamber to ≈ 6 K,
where we measured their critical temperatures (T_c) and perpendicular critical fields
(B_{c2}) at low field strengths ranging from 0 to ≈ 450 mT. We will compare our findings
to the proximity effect theory for the T_c and B_{c2} of thin film bilayers.

Phillip Broussard
Covenant College

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