

Abstract Submitted
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Inverse proximity effect in Ferromagnet/ Superconductor composite¹ JIYEONG GU, Department of Physics and Astronomy, California State University, Long Beach, 1250 Bellflower Blvd. Long Beach, CA 90840-3901 — Recently, a theoretical study of spin-screening effect in ferromagnet (F)/superconductor (S) heterojunctions has been reported [1]. From the physics involved in F/S junctions it is clear that the inverse proximity effect (the magnetization of the system changes due to the presence of the superconducting correlations) is related to the properties of the conducting electron. Either bi-layer or granular (F particles embedded in S matrix, for example, Co particles embedded in Nb matrix) types of F/S thin films have been made using co-sputtering method. We measured the magnetization as a function of temperature, especially above and below the superconducting critical temperature, to determine the screening or antiscreening effect in F/S hybrid system. This experiment is useful to examine the electronic properties at the Fermi level and the distribution of magnetic moments of ferromagnetic metals. Not only inverse proximity effect but also other properties such as regular proximity effect have been investigated. [1] F. S. Bergeret and N. Garcia, Phys. Rev. B 70, 052507 (2004)

¹Characterization of the thin films at low temperature and high magnetic field was carried out in the Molecular Materials Research Center at the Beckman Institute of the California Institute of Technology.

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