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Josephson tunneling studies of odd-parity superconductivity in Sr_2RuO_4 RONALD MYERS, YING LIU, Pennsylvania State University, D. FOBES, Z. MAO, Tulane University, H. YAGUCHI, Y. MAENO, Kyoto University
— In the recent phase-sensitive work that provided the most unambiguous evidence for odd-parity superconductivity in Sr_2RuO_4, we used $Au_{0.5}In_{0.5}$ as the s-wave superconducting counter electrode in the SQUID structure. However, $Au_{0.5}In_{0.5}$ has a T_c less than that of Sr_2RuO_4, making detection of the pairing symmetry near the T_c of Sr_2RuO_4 inaccessible to the phase sensitive measurements. To go beyond this limit and open up possibilities of several other experiments involving Josephson tunneling into Sr_2RuO_4, we seek an alternative material system with an s-wave superconductor of $T_c > 1.5$K that would exhibit Josephson coupling with Sr_2RuO_4. An Ag/Pb/Ag trilayer has been chosen for this purpose. Ag/Pb/Ag-Sr_2RuO_4 tunneling devices were prepared that showed a suppressed superconducting gap feature of Sr_2RuO_4, suggesting the presence of superconductivity at the polished ac face of a Sr_2RuO_4 crystal. However, no Josephson coupling between Ag/Pb/Ag and Sr_2RuO_4 was detected. More experiments are currently underway, and new results will be presented.

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