

Abstract Submitted  
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**Andreev effect in GaMnAs/Nb microstructures for improved extraction of spin polarization** JUSTIN GUENTHER, DIANA DAHLIAH, TAYLOR REID, ROBERT TOLLEY, CHRIS LITTLE, Miami University, XINYU LIU, JACEK FURDYNA, University of Notre Dame, KHALID EID, Miami University — Point contact Andreev reflection is a powerful technique for extracting the spin polarization in a large variety of ferromagnetic materials. Yet, it produced conflicting data that proved difficult to model when studying spin polarization in GaMnAs, due in part to two main problems: the high resistivity of GaMnAs makes it difficult to isolate the interfacial conductance and characterize it properly and there can be a Schottky barrier at the GaMnAs/superconductor interface. We use photolithography to fabricate GaMnAs/Nb micro-structures that offer a direct way to extract the interface conductance and the spin polarization at the interface. Furthermore, our results show that the Schottky barrier can play a crucial role in determining the behavior of the interface conductance when varying the applied voltage.

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