Abstract Submitted
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Manipulating spins using spin-valves of self-assembled molecular wires[1] VLADIMIR BURTMAN, VALY Z. VARDENY, University of Utah — We studied spin transport using spin-valves of self-assembled monolayer (SAM) devices sandwiched between two ferromagnetic electrodes, namely La0.33Sr0.66MnO3 (LSMO) and Co having different coercive fields. The SAM film contained isolated molecular wires that bond with both electrodes, in an otherwise insulating molecular matrix that bond only with one electrode. The relative resistance change, or magnetoresistance (MR), DR/R between the device resistance with the electrodes magnetizations parallel and anti-parallel to each other serves as a figure of merit and show spin injection through the isolated molecular wires. We found a giant MR of up to 80% at 10K. The MR response was measured at various temperatures and biasing voltages to obtain the complete magneto-transport characteristic properties of the organic spin-valve devices.

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