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Spin Polarized Scanning Tunneling Microscopy of Alq3 on Cr(001)[1] DANIEL DOUGHERTY, ZHENGANG WANG, ALEX PRONSCHINSKE, Department of Physics, North Carolina State University — The field of organic spitronics has been strongly motivated in recent years by the observation of giant magnetoresistive effects in tris-(8-hydroxyquinoline) aluminum (Alq3) films and nanostructures. It is crucial to understand the spin- dependent electronic structure at metal-Alq3 interfaces. We have carried out spin polarized scanning tunneling microscopy to measure the local density of electronic states for sub-monolayer films of Alq3 grown on the layered anitferromagnetic Cr(001) surface. We report an energy-dependent tunneling conductance asymmetry for single molecules adsorbed on differently magnetized (001) terraces and discuss its connection with metal-molecule hybridization and magnetoresistive effects in Alq3 spintronic devices.

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