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Spin-Polarized Hybridization at the interface between different 8-hydroxyquinolates and the Cr(001) surface JINGYING WANG, ANDREW DELOACH, DANIEL B DOUGHERTY, Department of Physics, North Carolina State University, DOUGHERTY LAB TEAM — Organic materials attract a lot of attention due to their promising applications in spintronic devices. It is realized that spin-polarized metal/organic interfacial hybridization plays an important role to improve efficiency of organic spintronic devices. Hybridized interfacial states help to increase spin injection at the interface. Here we report spin-resolved STM measurements of single tris(8-hydroxyquinolinato) aluminum molecules adsorbed on the antiferromagnetic Cr(001). Our observations show a spin-polarized interface state between Alq₃ and Cr(001). Tris(8-hydroxyquinolinato) chromium has also been studied and compared with Alq₃, which exhibits different spin-polarized hybridization with the Cr(001) surface state than Alq₃. We attribute the differences to different character of molecular orbitals in the two different quinolates.

Jingying Wang
Department of Physics, North Carolina State University

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