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Doping dependence of C_{60} monolayers studied by scanning tunneling microscopy RYAN YAMACHIKA, ANDRE WACHOWIAK, MICHAEL GROBIS, MICHAEL CROMMIE, Department of Physics, University of California, Berkeley, Materials Sciences Division Lawrence Berkeley National Laboratory, Berkeley, CA — The electronic properties of C_{60} compounds can be tuned by charge-doping them with alkali impurities. This results in an interplay between molecular charge transfer, Coulomb repulsion, phonon coupling, and nearest neighbor interactions. Here we present a scanning tunneling microscopy/spectroscopy study of K doped C_{60} monolayers on Au(111). We find that the morphology and electronic structure of C_{60} monolayers change significantly with doping level. In addition to LUMO/LUMO+1 shifts, we observe strong variations in the low-energy local density of states.

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