Dispersion and thermal broadening of the valence band photoemission features of C_{60} compounds

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In this talk we present recent angle-resolved photoemission spectroscopy investigations of some alkali-metal intercalated fullerene compounds. In particular, we report on the band dispersion in K_3C_{60} and on the thermal broadening of the HOMO and LUMO photoemission features in Cs_6C_{60}, K_4C_{60}, Cs_4C_{60}, RbC_{60} and C_{60}. The dispersion of the filled LUMO-derived bands near the Fermi level in K_3C_{60}, as measured at 30 K, is less than 100 meV along the two main symmetry directions of the (111) surface. Among the A_xC_{60} fullerides considered here, we also observe substantial differences in the angular coefficients (slope) of the linear thermal broadening of the photoemission HOMO feature at high temperature, which may be related to differences in the electron-phonon coupling strength.

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