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## Identification of molecular chirality on two dimension by circular dichroism

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The measurement and control of chiral molecules on two-dimensional system attract great attention on enantio-selective heterogeneous catalysis. In search of a method to control the enantio-selectivity in chemical reactions, recent interest has turned to adsorbed chiral molecules. The detection of chirality in adsorbed molecules is difficult, however, having so far been mostly demonstrated in scanning tunnelling microscopy. Here I introduce two examples on the study of adsorbed chiral molecules, *i.e.* 2,3-butanediol on Si(100) and tartaric acid on Cu(110), using circular dichroism in core level photoemission. The overall chirality of the molecules is conserved even after adsorption and bonding to the substrates. We observe clear dichroism in the carbon 1s emission signal from (*R,R*)- and (*S,S*)-butanediol (tartaric acid). In view of the increasing importance of an analysis of biologically active surface species, this observation may provide a path to analyzing chiral species in complex adsorbed molecules by an atom-specific tool.