Contribution ID: **187** Type: **Talk**

【214】Aurophilic interactions on surfaces

Wednesday 28 August 2019 15:00 (15 minutes)

Metal complexes containing gold in the formal oxidation state +I exhibit a very strong metallophilic interaction, which is often decisive for their arrangement in the solid state. To study this attractive interaction on surfaces, we investigated films with a thickness of just a few layers of 2-naphthyl-isonitrile-gold(I)-chloride on Au(111) and Au(110) surfaces. The physical vapor deposition was monitored by means of differential reflectance spectroscopy (DRS) and photoelectron emission microscopy (PEEM). After growth, the structures were characterized by means of scanning tunneling microscopy (STM) and low energy electron diffraction (LEED). In fact, the Au(110)(1x2) reconstruction of the substrate surface is lifted upon adsorption of the molecules suggesting a sizable interaction between Au(I) complexes and the Au substrate.

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Session Classification: Surfaces, Interfaces and Thin Films

Track Classification: Surfaces, Interfaces and Thin Films