

Coordination Reactions and Layer Exchange Processes at a Buried Metal-Organic Interface

*Min Chen¹, Michael Röckert², Jie Xiao², Hans-Jörg Drescher¹, Hans-Peter Steinrück², Ole Lytken²,
J. Michael Gottfried¹*

¹Fachbereich Chemie, Physikalische Chemie, Philipps-Universität Marburg, 35032 Marburg,
Hans-Meerwein-Str., Germany

²Lehrstuhl für Physikalische Chemie II, Friedrich-Alexander-Universität Erlangen-Nürnberg, 91058 Erlangen,
Egerlandstr. 3, Germany

Supporting Information

Desorption experiment of submonolayer NiPc on Cu(111)

In order to verify that submonolayer NiPc does not desorb from the Cu(111) surface below 700 K, half a monolayer of NiPc was deposited onto Cu(111) at 300 K. A C 1s XP spectrum of this as-prepared sample is shown in Figure S1a (bottom). After this, a TPD experiment with a heating rate of 5 K/s was performed at $m/z = 571$, corresponding to NiPc. The resulting TPD trace as shown in Figure S1b (which has the same intensity scale as Figures 4-6 in the paper) confirms that submonolayer NiPc does not desorb from Cu(111) surface up to 700 K. To exclude that fragments of NiPc desorb, another C 1s spectrum was recorded after the TPD experiment (Figure S1a, top). The peak has the same integral (within the margins of error) as the one taken before TPD, indicating that NiPc remains on the surface.

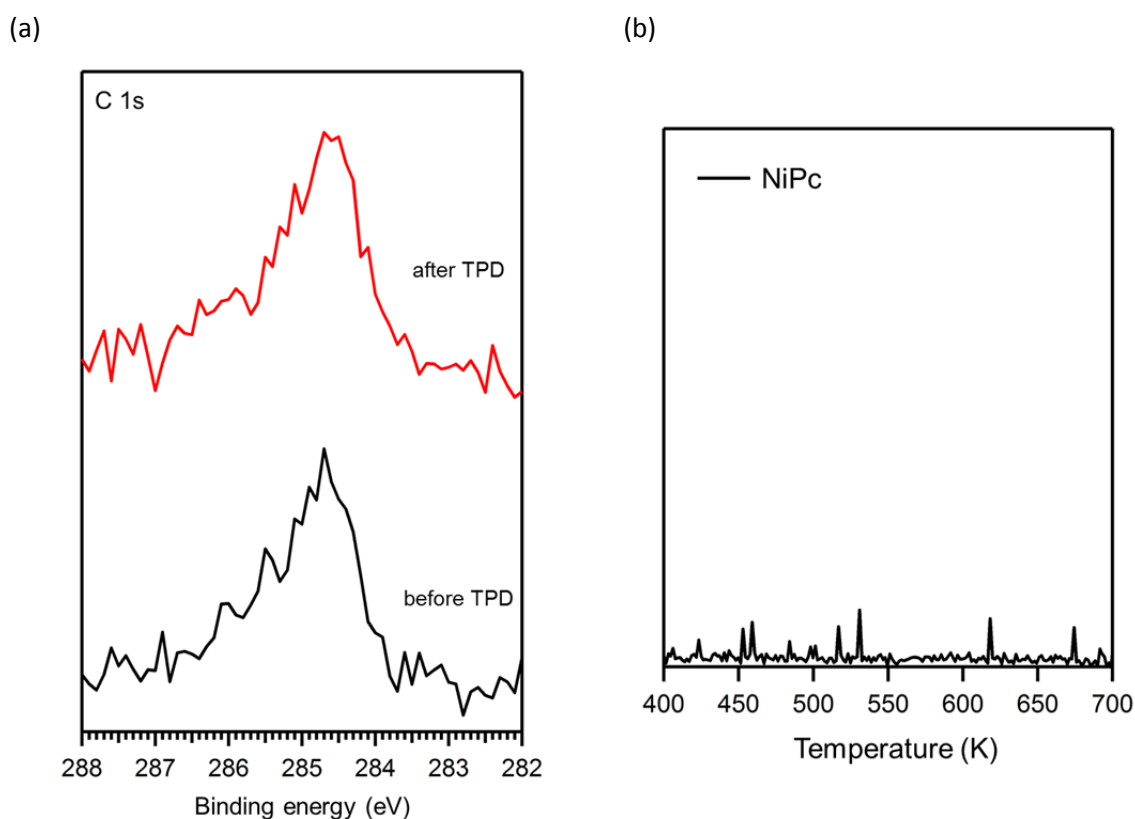


Figure S1. (a) Bottom curve: C 1s XP spectrum of ~ 0.5 monolayer NiPc, taken immediately after deposition of NiPc onto Cu(111) at 300 K. Top curve: C 1s XP spectrum of the same sample taken after the TPD measurement, during which the sample was heated to 700 K. (b) TPD of NiPc ($m/z = 571$) on Cu(111), taken with a heating rate of 5 K/s immediately after deposition of NiPc. The intensity scale is the same as in Figures 4-6 in the paper to allow for direct comparison.