Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supporting Information

Molecular Anchoring to Oxide Surfaces in Ultrahigh Vacuum and in Aqueous Electrolytes: Phosphonic Acids on Atomically-Defined Cobalt Oxide

Manon Bertram[1], Christian Schuschke[1], Fabian Waidhas[1], Matthias Schwarz[1], Chantal Hohner[1], María A. Montero[2], Olaf Brummel[1,*], Jörg Libuda[1]

[1]*Interface Research and Catalysis, Erlangen Catalysis Resource Center, Friedrich-Alexander-Universität Erlangen-Nürnberg, Egerlandstraße 3, D-91058 Erlangen, Germany*

[2]*Instituto de Química Aplicada del Litoral, IQAL (UNL-CONICET), Santiago del Estero 2829, Santa Fe, Argentina*

* corresponding author: olaf.brummel@fau.de

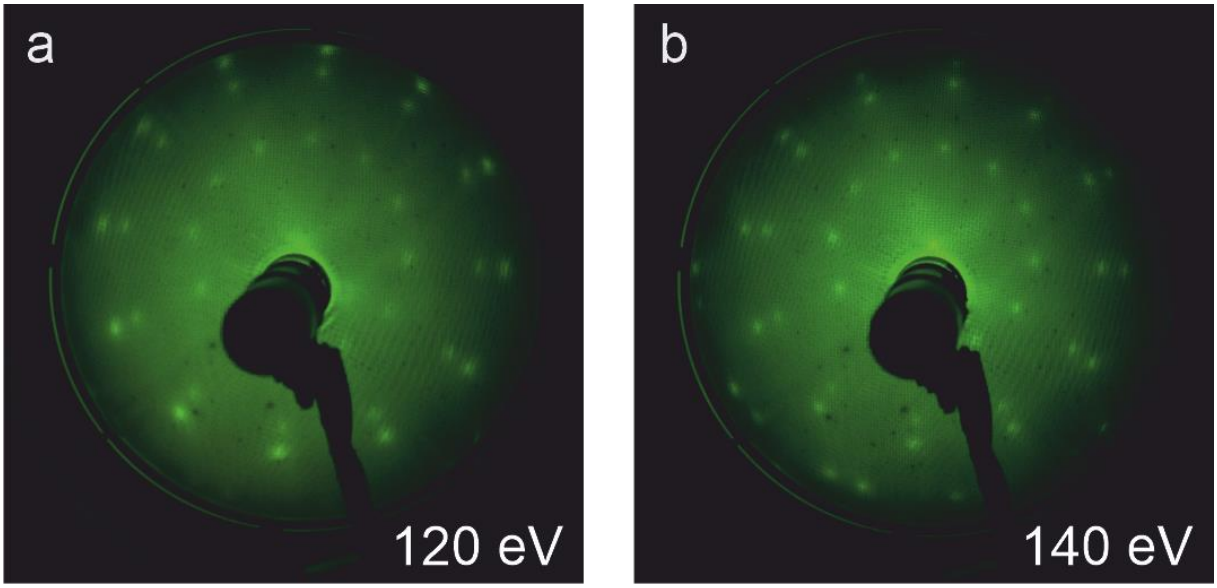

Figure S1: LEED images of the Co_3O_4(111) film after preparation at 120 (a) and 140 eV (b).

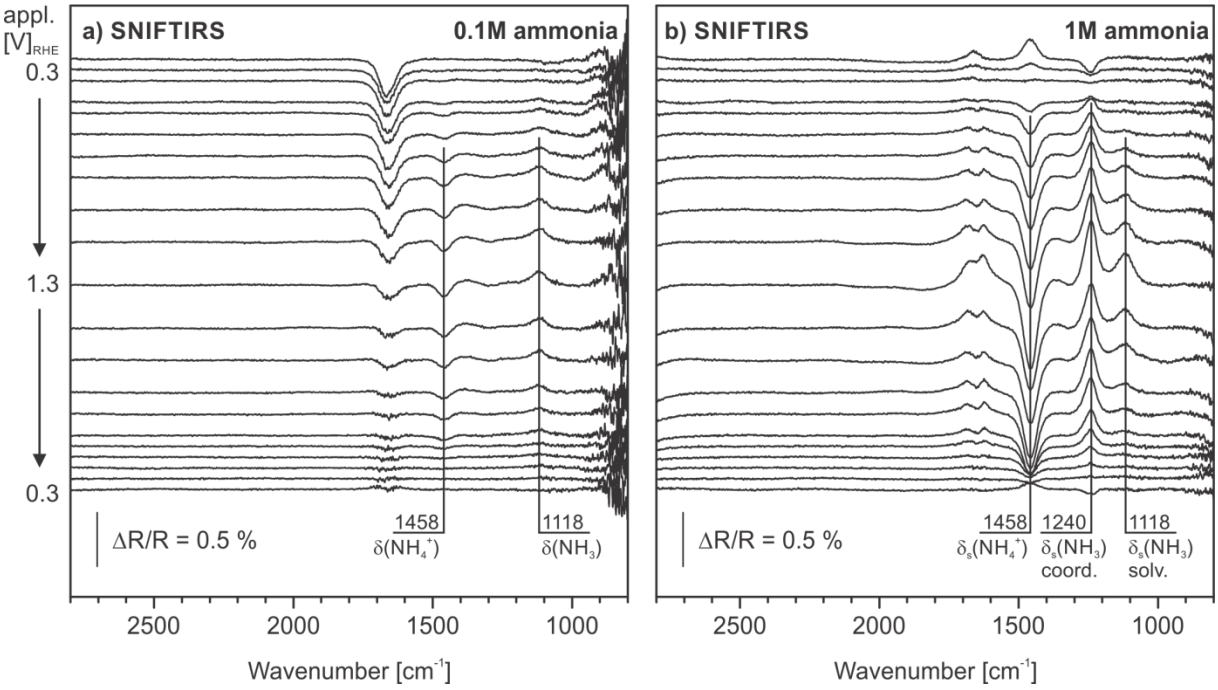

Figure S2: SNIFTIRS spectra of 0.1 M (a) and 1 M (b) ammonia buffer (pH 10) on Co_3O_4(111)/Ir(100) measured between 0.3 and 1.3 V_{RHE} in p-polarization. The reference potential is 0.3 V_{RHE}.

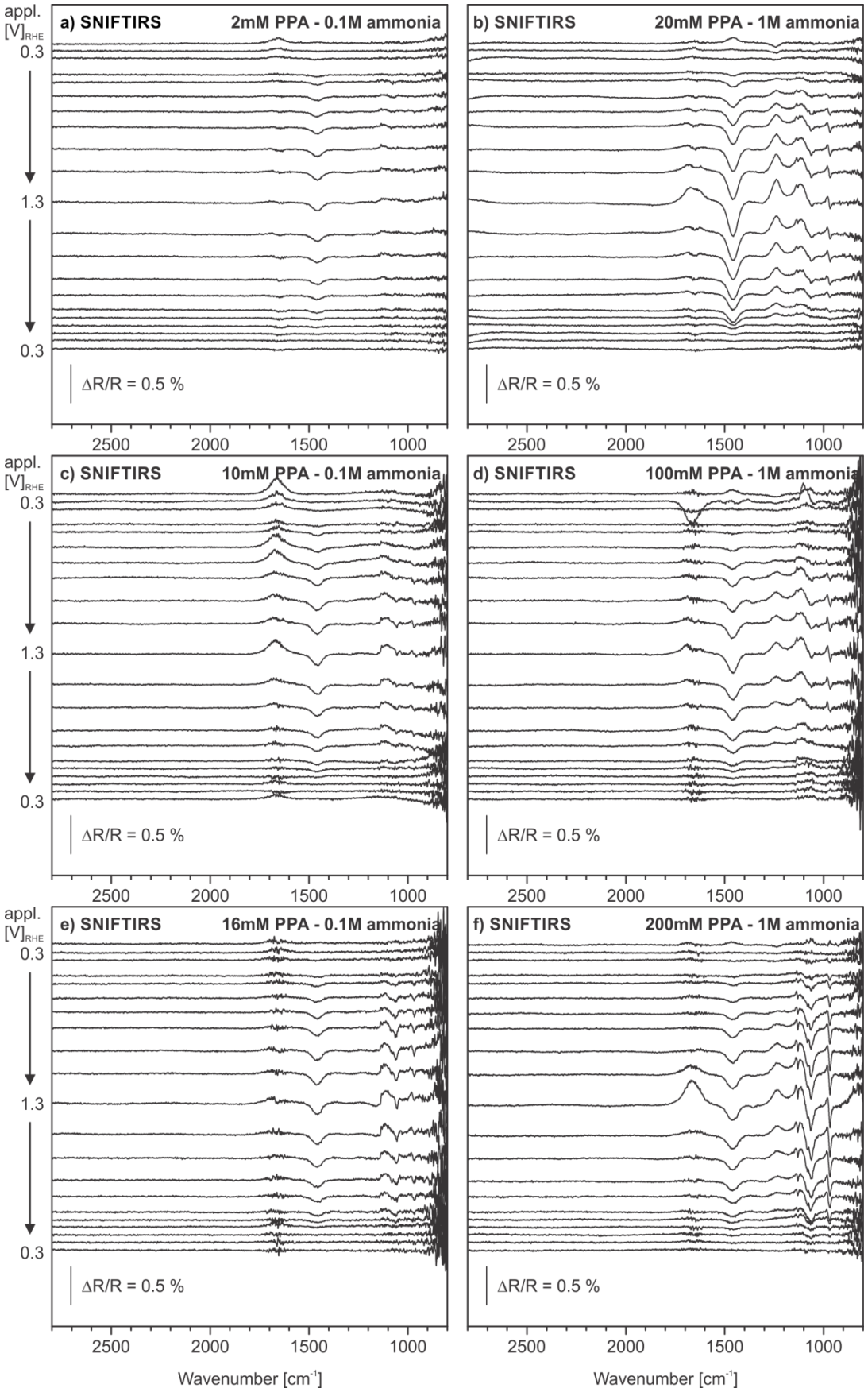

Figure S3: SNIFTIRS spectra recorded after adsorption of PPA on Co_3O_4(111)/Ir(100) at different concentrations of buffer and PPA; left: 0.1 M ammonia buffer with 2mM (a), 10 mM (c), and 16 mM PPA (e); right: 1 M ammonia buffer with 20 mM (b), 100 mM (d), and 200 mM PPA (f). The reference potential is 0.3 V_{RHE}.