Supplementary Material (ESI) for *PCCP*

Supporting Information

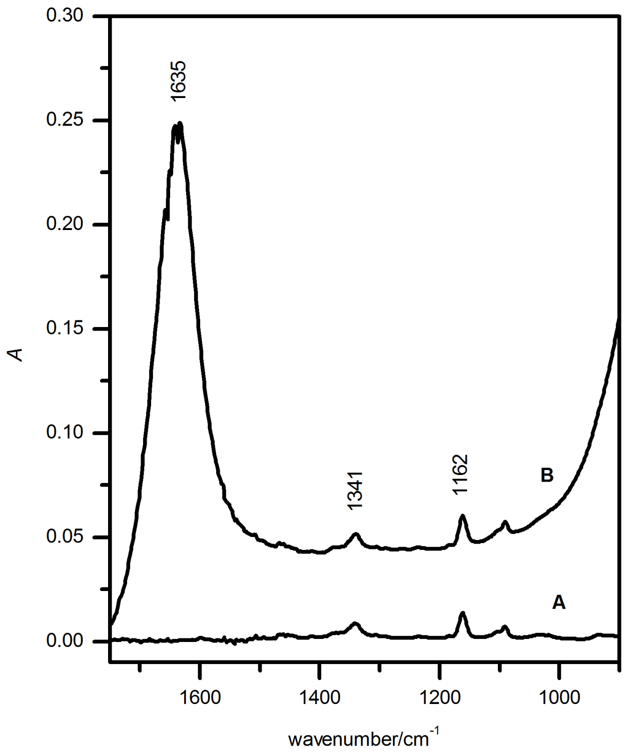

Figure S1. ATR-FTIR spectra of the Copper(II) 2,3,9,10,16,17,23,24-octakis(decyltosylaminomethyl)-phthalocyanine layer deposited onto the diamond IRE. A: dry film, B: hydrated film (pure water was flowed continuously through the cell during spectrum acquisition). Water absorptions, included bending signal at 1635 cm^{-1}, overlap to phthalocyanine absorption bands, which do not undergo any intensity reduction following hydration. This demonstrates that the layer is not washed away by the water stream and that it does not undergo any swelling upon contact with water.

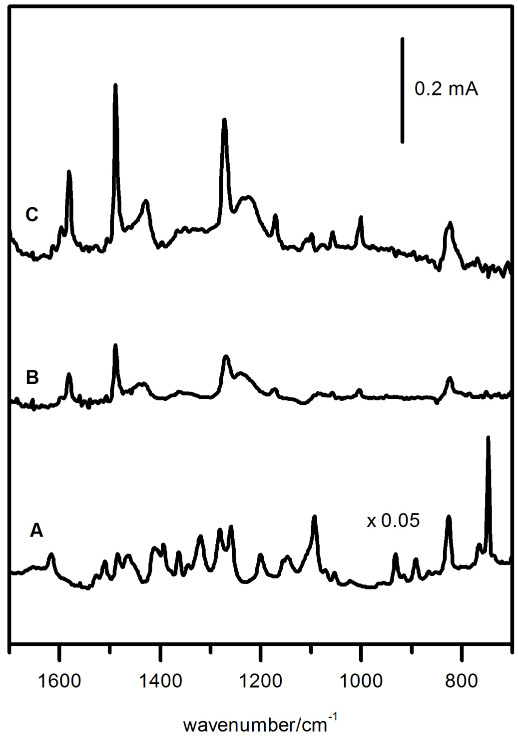

Figure S2. ATR mid-infrared spectra of a dry tetrakis-*t*-butyl-Cu-phthalocyanine layer (A) and 4-iodophenol in water solution (1 mM) (B). Spectrum B has been collected against a water background. Trace C represents the difference spectrum arising from interaction of Pc layer with 1 mM 4-iodophenol. No Pc layer difference signals are present in this case, suggesting that physisorption and/or hydrophobic interactions with the film account for the moderate increment of analyte concentration close to the diamond IRE.

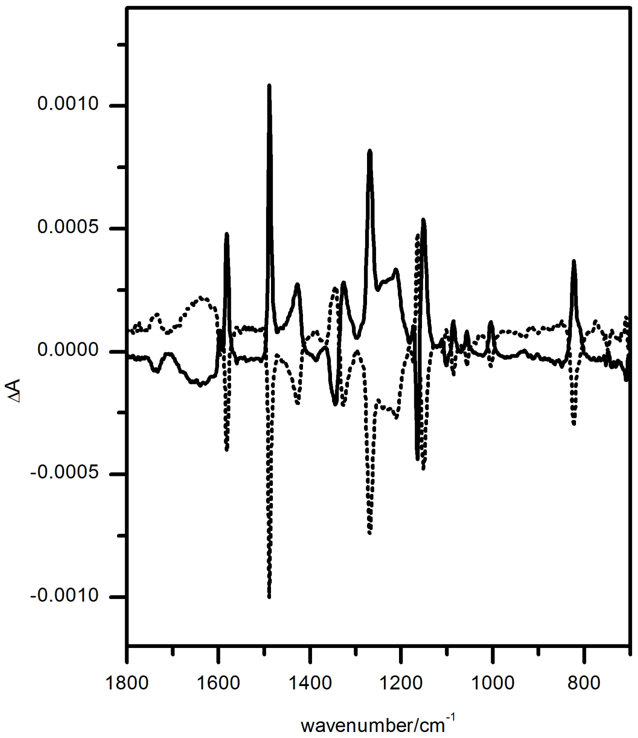

Figure S3. Phenol-bound *minus* phenol-unbound ATR-FTIR difference spectrum of Copper(II) 2,3,9,10,16,17,23,24-octakis(decyltosylaminomethyl)-phthalocyanine (solid line). Dotted line represents the difference spectrum relevant to the reverse transition from phenol-bound to phenol-unbound state. The analysis of these traces, which appear as mirror images, demonstrates the complete reversibility of the phenol-binding process.