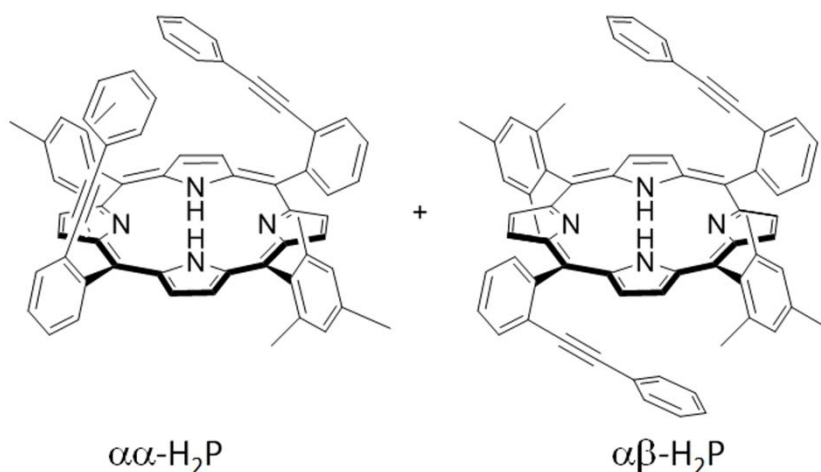


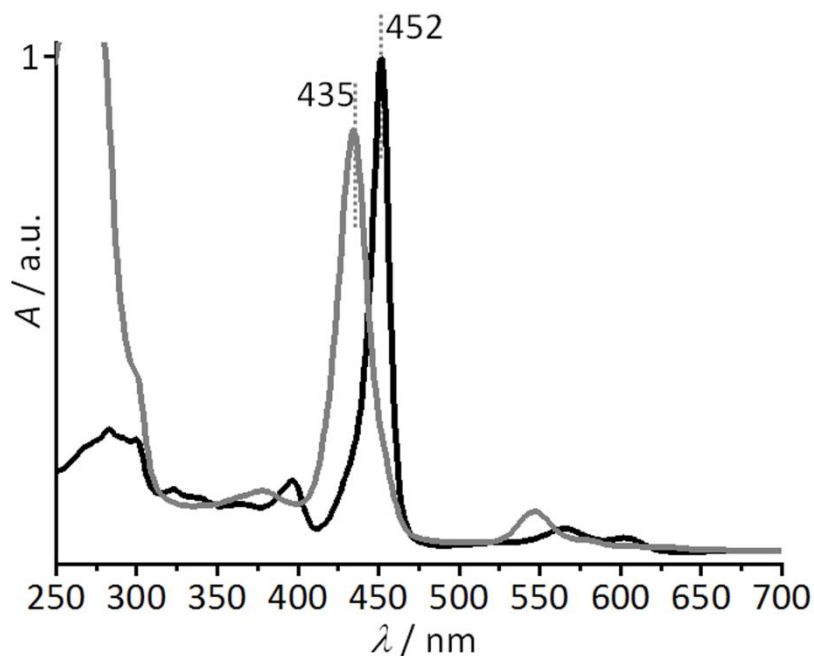
Electronic Supplementary Information

New class of Zn(II) and Cr(III) porphyrins incorporated into porous polymer matrices via an atmospheric pressure plasma enhanced CVD to form gas sensing layers

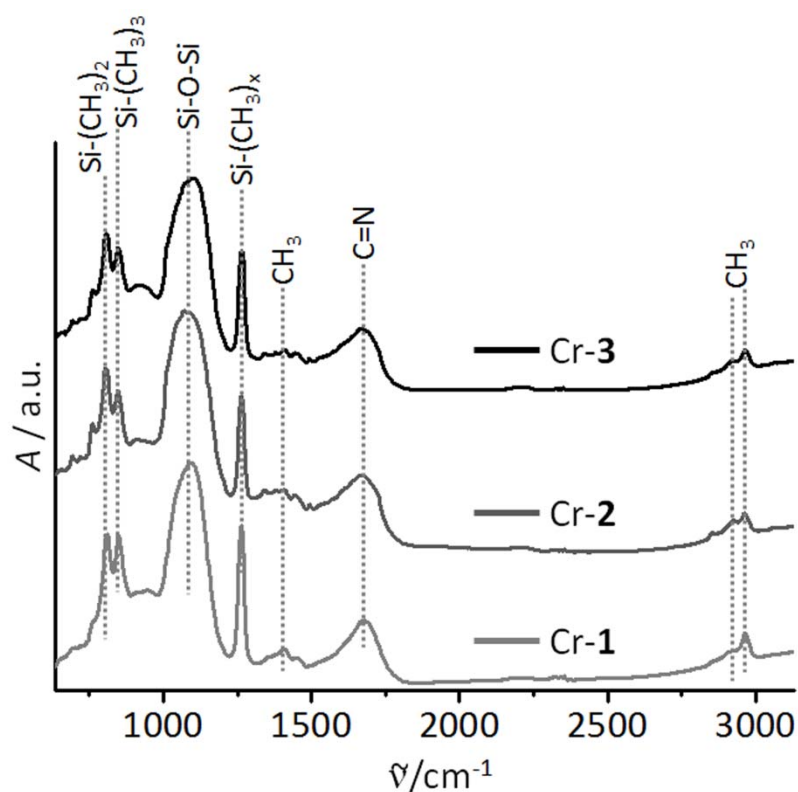
Philip Heier, Nicolas D. Boscher,\* Torsten Bohn, Katja Heinze,\* Patrick Choquet



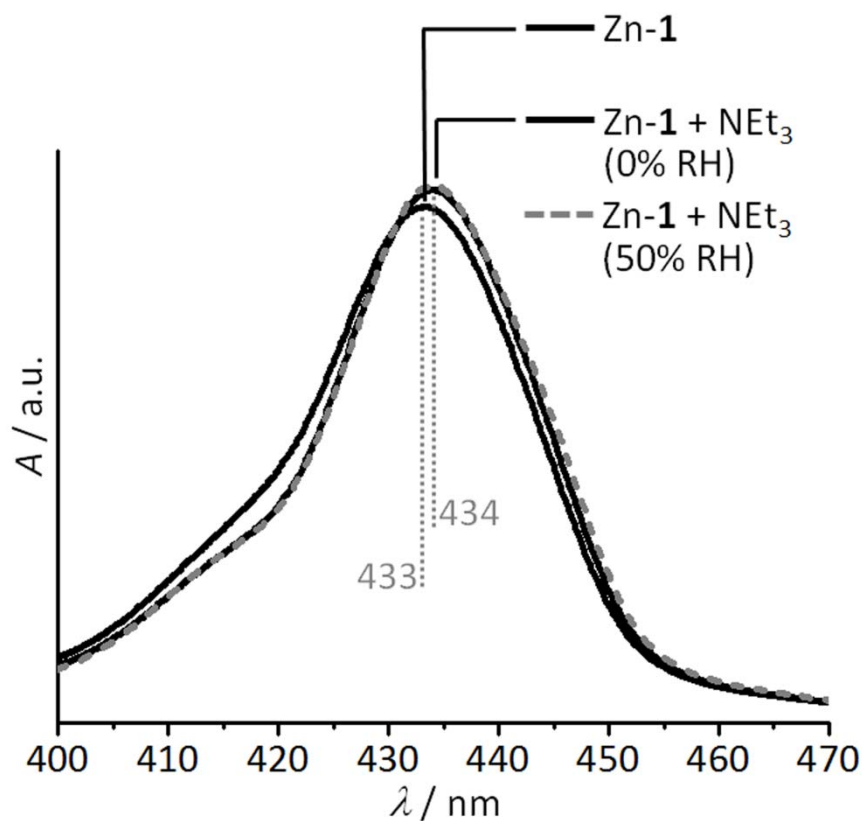
**Figure S1** Structure of the metal-free porphyrins  $\alpha\alpha\text{-}$  and  $\alpha\beta\text{-H}_2\text{P}$  as synthesized according to Ref. 49.



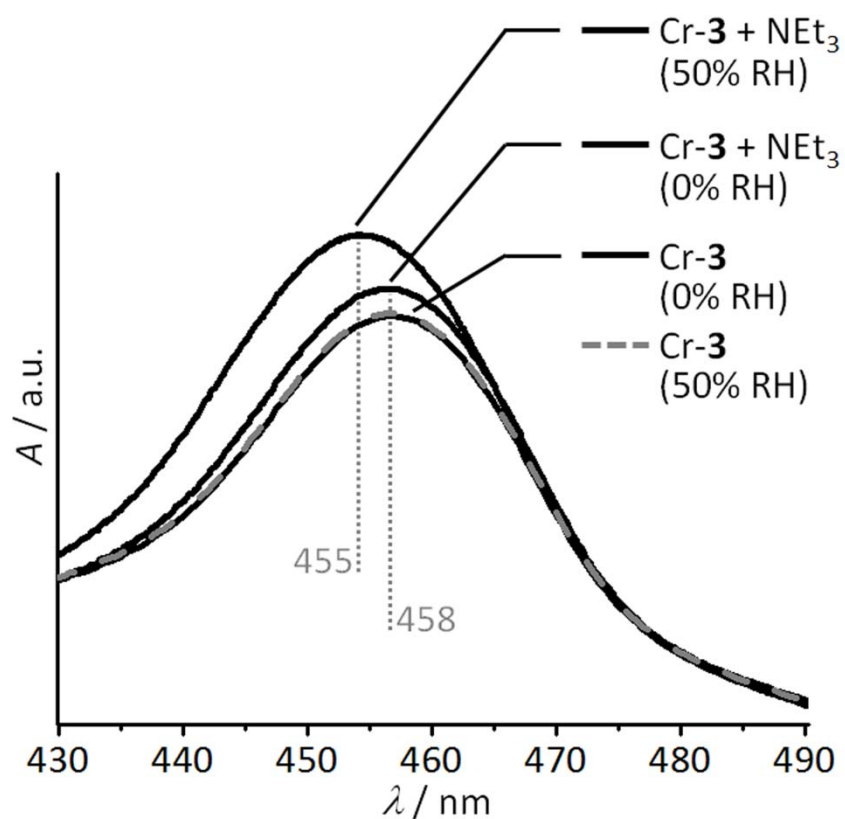
**Figure S2** UV/vis absorption spectra of  $\text{Cr}^{\text{III}}\text{P}(\text{Cl})(\text{H}_2\text{O})$  in pure  $\text{CH}_2\text{Cl}_2$  (black) and after addition of excess  $\text{NEt}_3$  (grey); the strong absorption arising around 300 nm with  $\text{NEt}_3$  is attributed to absorptions of  $\text{NEt}_3$ .



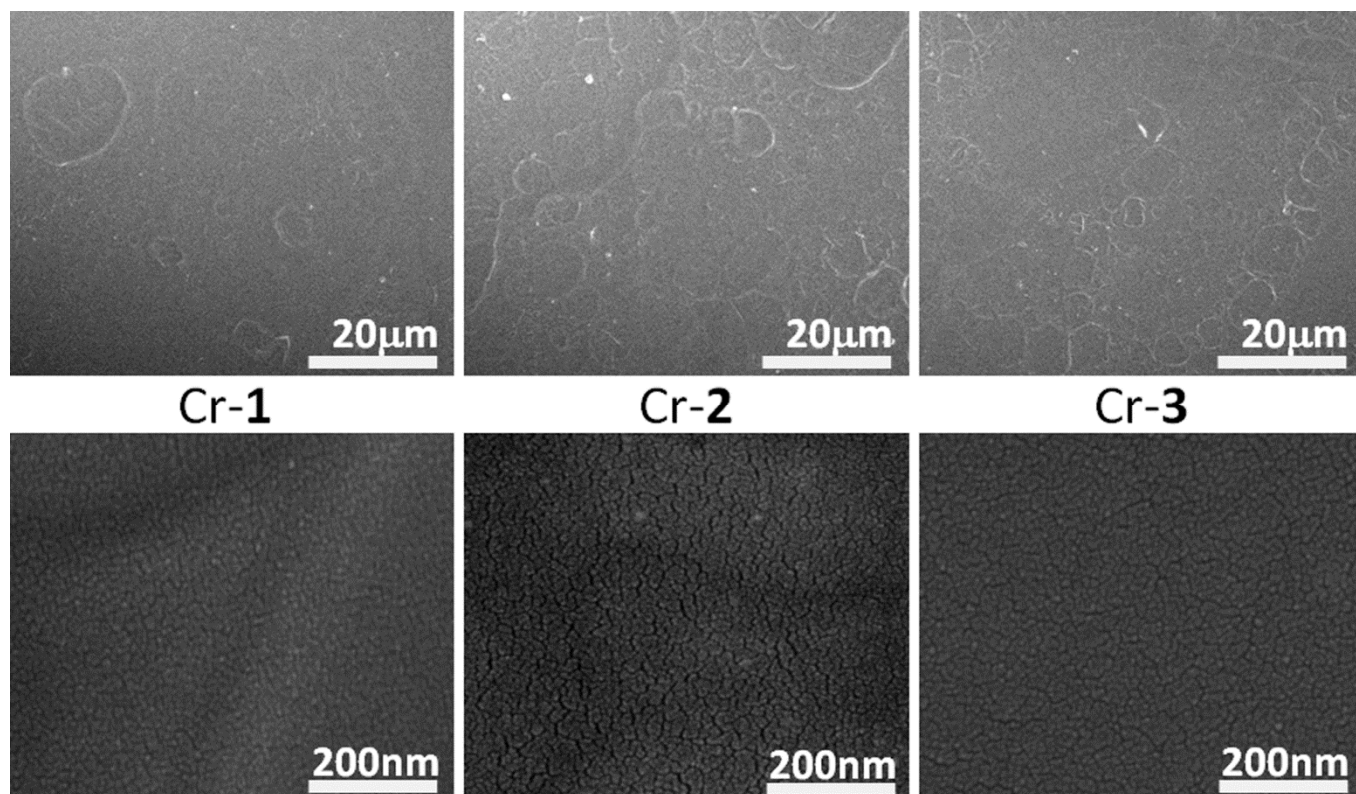
**Figure S3** FT-IR absorption spectra of Cr-1 (bottom), Cr-2 (middle) and Cr-3 (top) on aluminum.



**Figure S4** Absorption change of Zn-1 upon exposure to NEt<sub>3</sub> under different RH conditions: Zn-1 before amine exposure, after 2 h with 1% NEt<sub>3</sub> in dry nitrogen and with 50% RH (dashed, grey).



**Figure S5** UV/vis absorption of Cr-3 under different relative humidity conditions before and after NEt<sub>3</sub> exposure: Cr-3 in a dry nitrogen atmosphere, in a nitrogen atmosphere with 50% relative humidity (dashed, grey), after NEt<sub>3</sub> exposure in dry nitrogen atmosphere and after NEt<sub>3</sub> exposure with 50% RH.



**Figure S6** Top-view SEM images of Cr-1, Cr-2 and Cr-3; upper row: 1k magnification; lower row: 100k magnification.