

## Supporting Information

### Tailored protective groups for surface immobilization of ruthenium dyes

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## SEM of the NiO electrodes

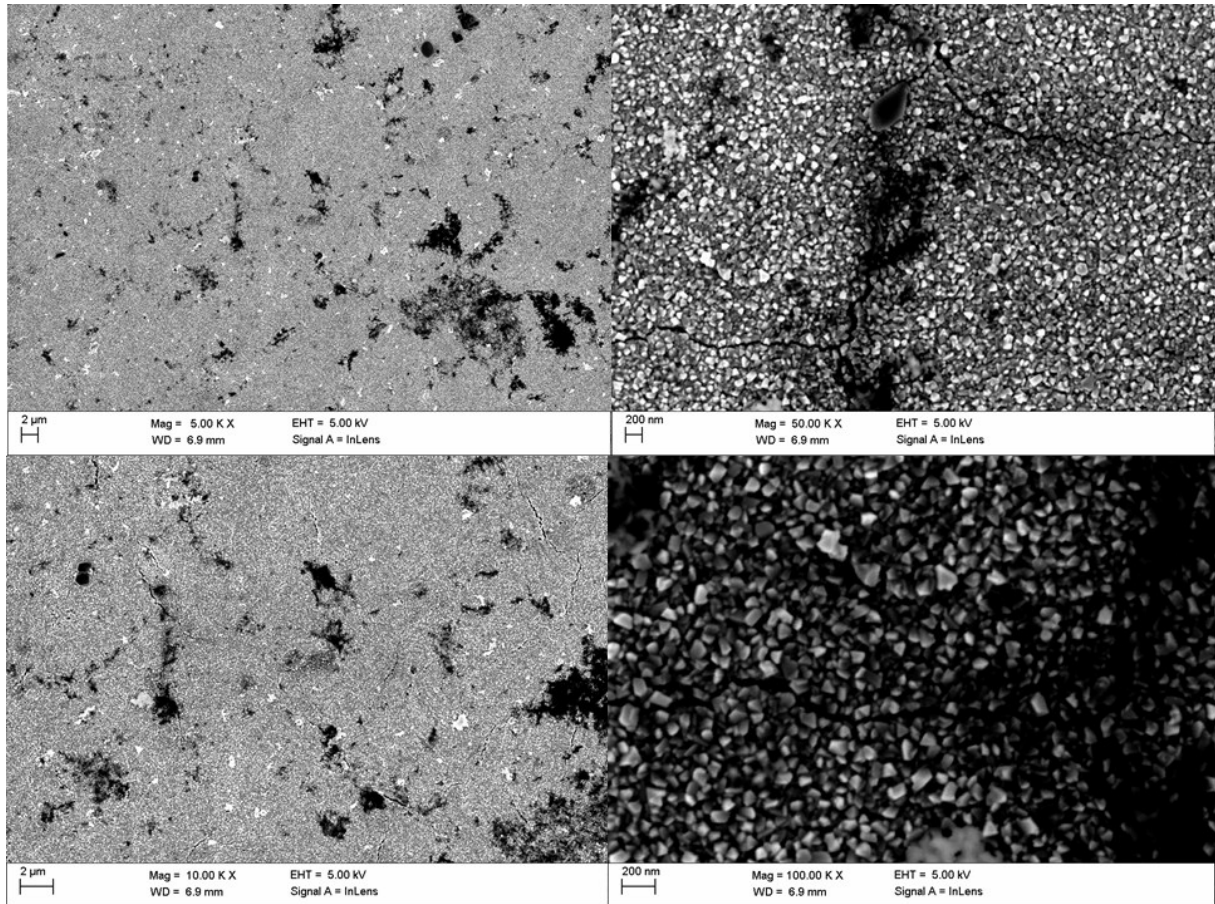


Figure S1: SEM pictures of the as-prepared NiO electrodes.

## NMR data of 2

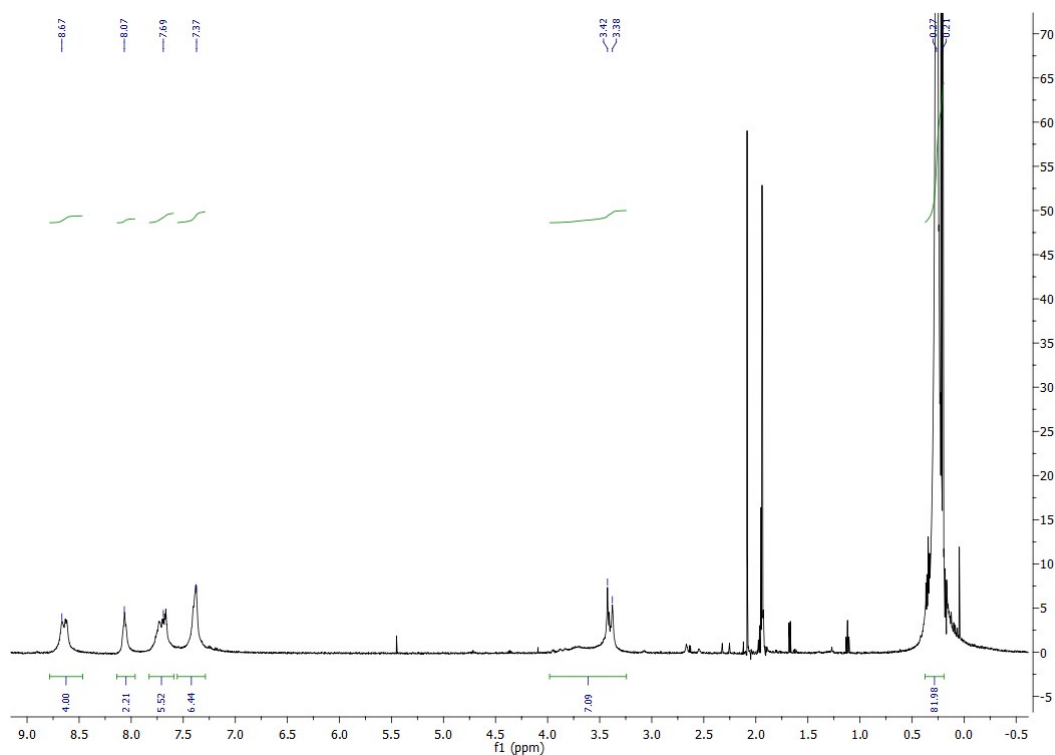


Figure S2:  $^1\text{H}$ -NMR spectrum of **2** in acetonitrile- $\text{d}_3$  at r.t..

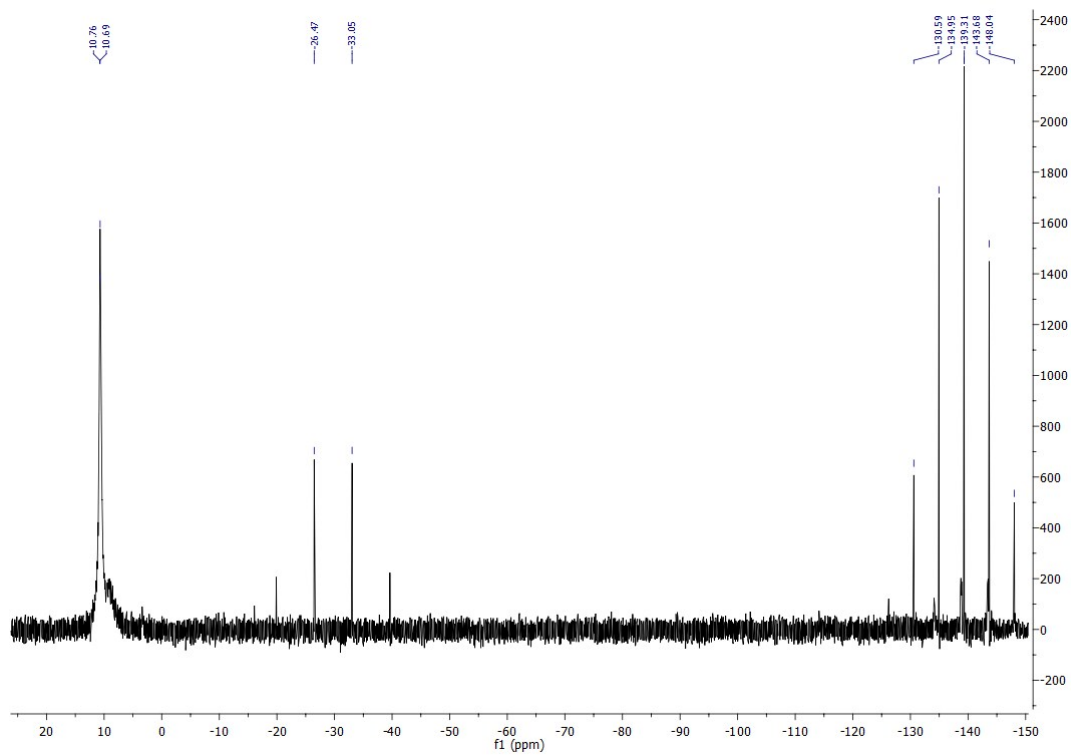


Figure S3:  $^{31}\text{P}$ -NMR spectrum of **2** in acetonitrile- $\text{d}_3$  at r.t.. The quartet at -26 ppm is assigned to a decomposition product of  $\text{PF}_6$  with TMSBr to form  $\text{PF}_5$  or similar structures.

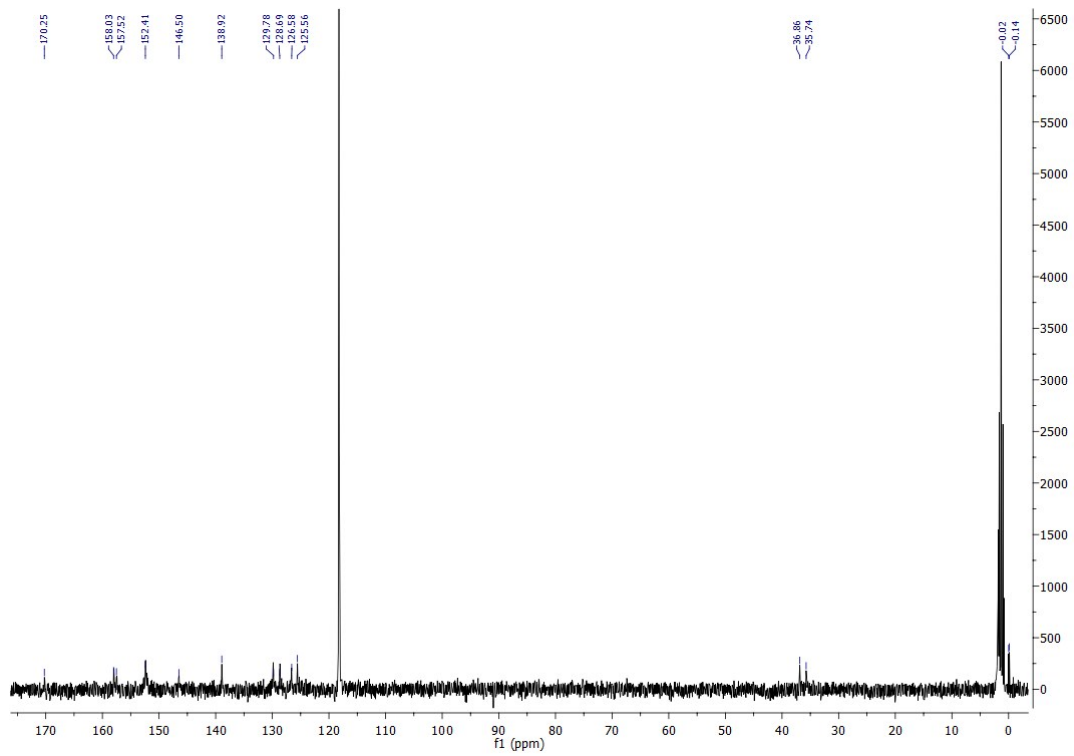


Figure S4:  $^{31}\text{C}$ -NMR spectrum of **2** in acetonitrile at r.t..

## Raman Data

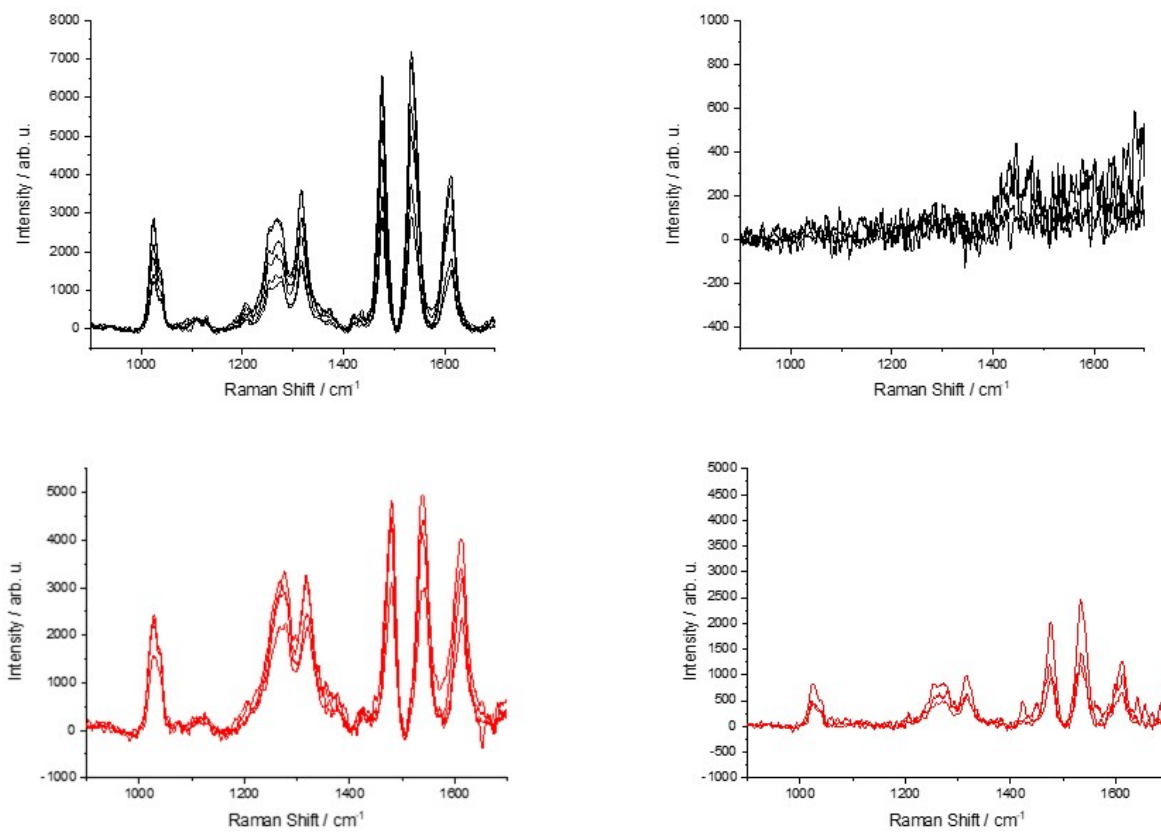
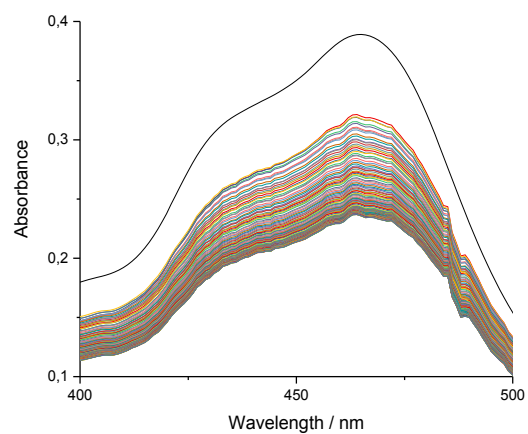
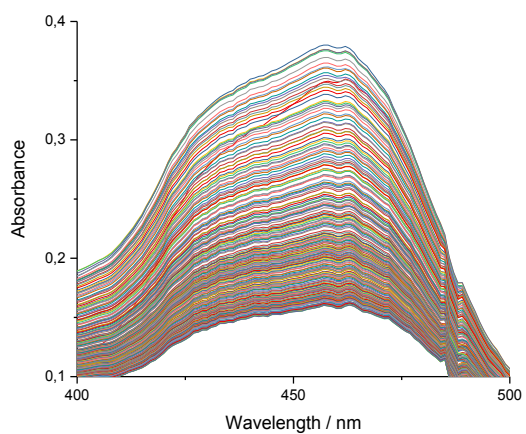


Figure S5: Raman spectra of 1 before (top left) and after (top right) and 2 (bottom left) before and after (right) after chronoamperometry for 1 h..

### ***Kinetic Investigation***



*Figure S6: UVvis absorption spectra of 1 in methanol and 2 in dichloromethane with added NiO powder.*

## ATR-IR Data

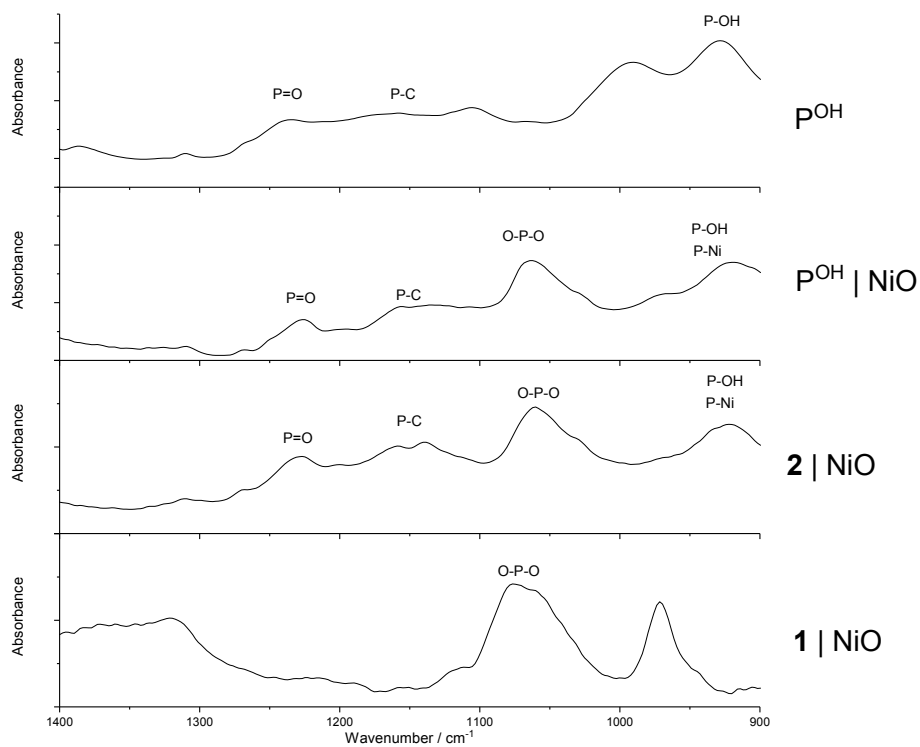


Figure S7: ATR-IR spectra of complex **1** and **2** and the hydrolysed free phosphonic acid of **2**, P<sup>OH</sup> at a NiO surface compared to the free phosphonic acid complex.

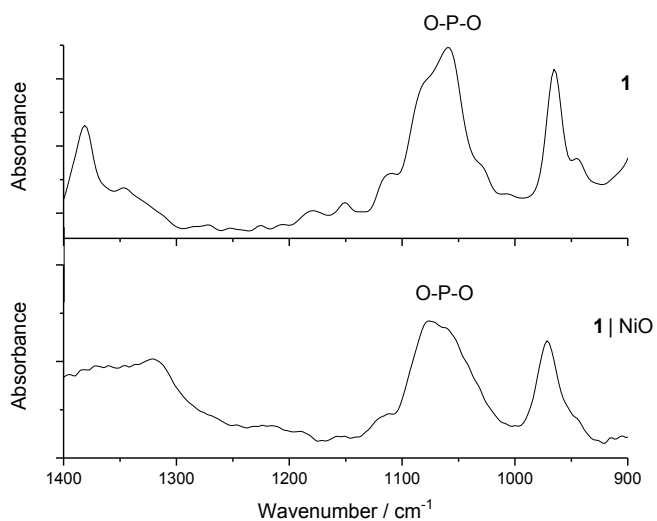


Figure S8: Comparison of ATR-IR spectra of complex **1** and **1** at an NiO surface.