Spectroscopic and Microscopic Characterization and Behavior of an

Optical pH Meter based on a Functional Hybrid Monolayer Molecular

System: Porphyrin Molecules Covalently Assembled on a Molecularly

Engineered Silica Surface

Antonino Gulino,^{a*} Placido Mineo,^b Emilio Scamporrino,^{a*} Daniele Vitalini,^b

and Ignazio Fragalà^{a*}

^aDipartimento di Scienze Chimiche, Università di Catania and I.N.S.T.M. UdR of Catania and ^bIstituto di Chimica e Tecnologia dei Polimeri – CNR Catania,

Viale Andrea Doria 6, 95125 Catania, Italy

Supplementary Materials

Figure S1

UV-vis spectra of the solution obtained mixing 5 mL of P3 $(1 \cdot 10^{-5} \text{ M})$ with 5 mL of Hg⁺⁺ $(1 \cdot 10^{-4} \text{ M})$ water solutions, recorded after 1, 5, 30, 60, 300 and 600 (dotted line) min after mixing.

Figure S2

UV-vis spectra of the solution obtained mixing 5 mL of P3 ($1 \cdot 10^{-5}$ M) with 5 mL of Cu⁺⁺

 $(1 \cdot 10^{-4} \text{ M})$ solutions, recorded after 1, 5, 30, 60, 300 and 600 (dotted line) min after mixing.

Figure S3

UV-vis spectra of the solution obtained mixing 5 mL of P3 $(1 \cdot 10^{-5} \text{ M})$ with 5 mL of Zn⁺⁺

 $(1 \cdot 10^{-4} \text{ M})$ solutions, recorded after 1, 5, 30, 60, 300 and 600 (dotted line) min after mixing.

Figure S1

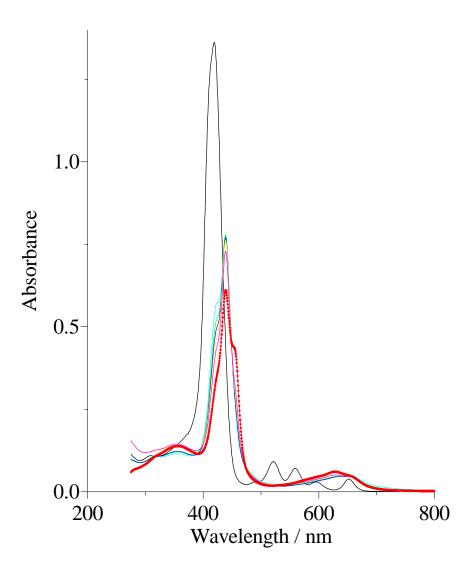


Figure S2

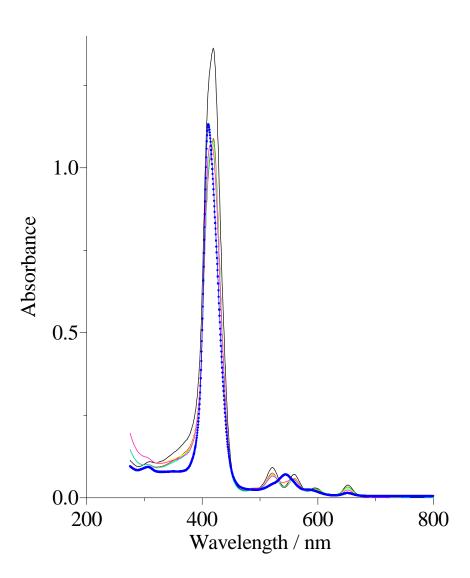


Figure S3

