

Polymeric optodes based on upconverting nanorods for
fluorescent measurements of pH and metal ions in blood
samples

Liangxia Xie, Yu Qin and Hong-Yuan Chen*

State Key Laboratory of Analytical Chemistry for Life science, School of Chemistry
and Chemical Engineering, Nanjing University, Nanjing, 210093, China.

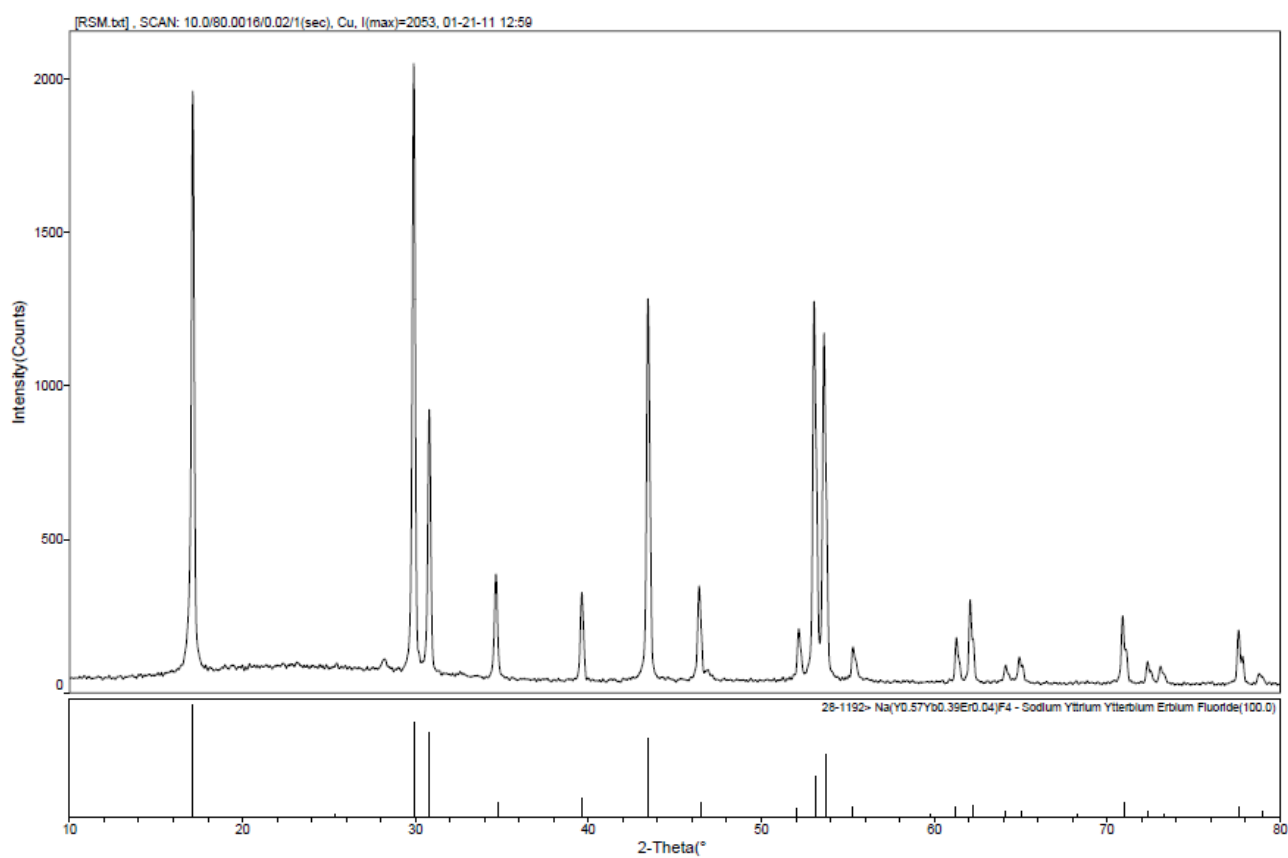


Figure S1. Experimental powder X-ray diffraction (XRD) pattern (top curve) and the calculated line pattern for hexagonal NaYF₄: Er, Yb (JCPDS No. 28-1192, bottom curve)

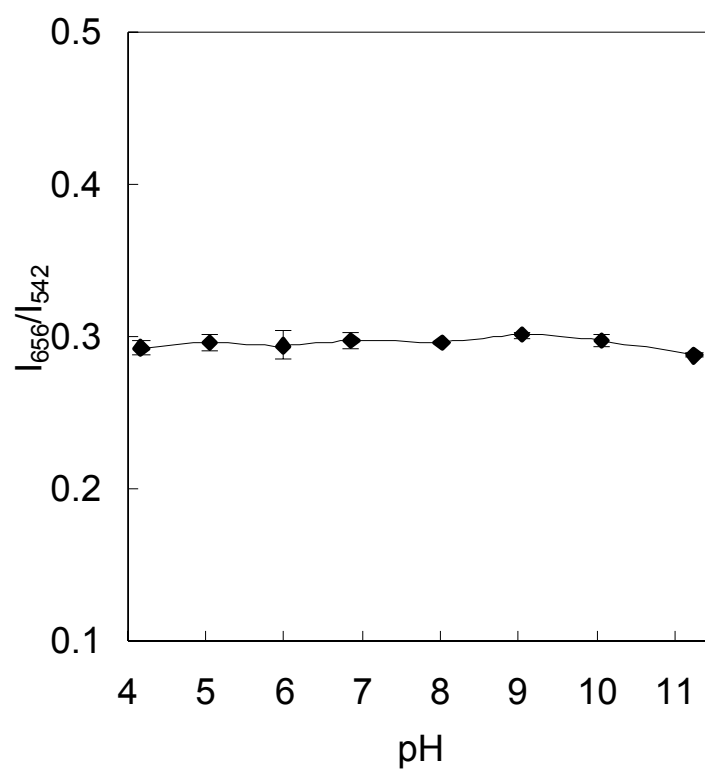


Figure S2. Upconversion luminescence intensity ratio of peak 656 nm to peak 542 nm of the optode without ETH 5418

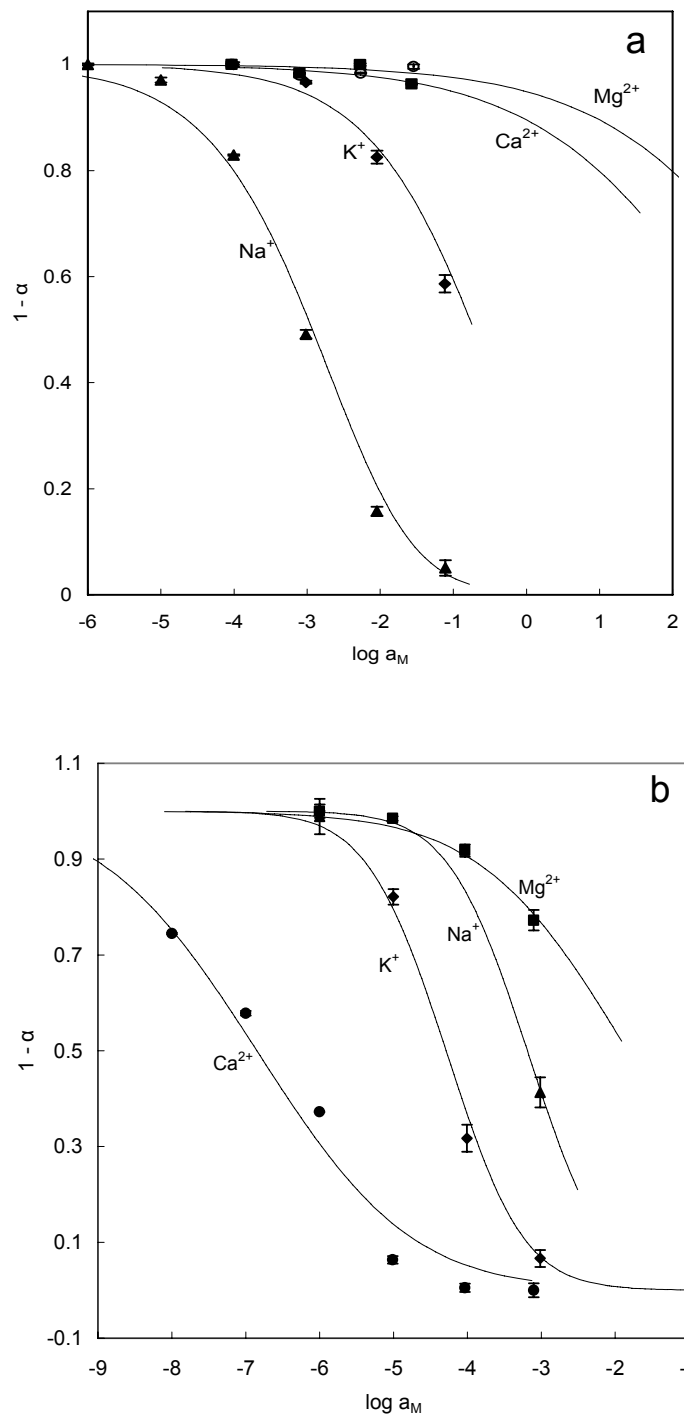


Figure. S3. Response of the upconverting nanorods based (a) Na^+ -selective and (b) Ca^{2+} -selective optode to various sample ions buffered by 0.01M Gly-HCl solution (pH 4.8). α is the deprotonation degree of ETH 5418.

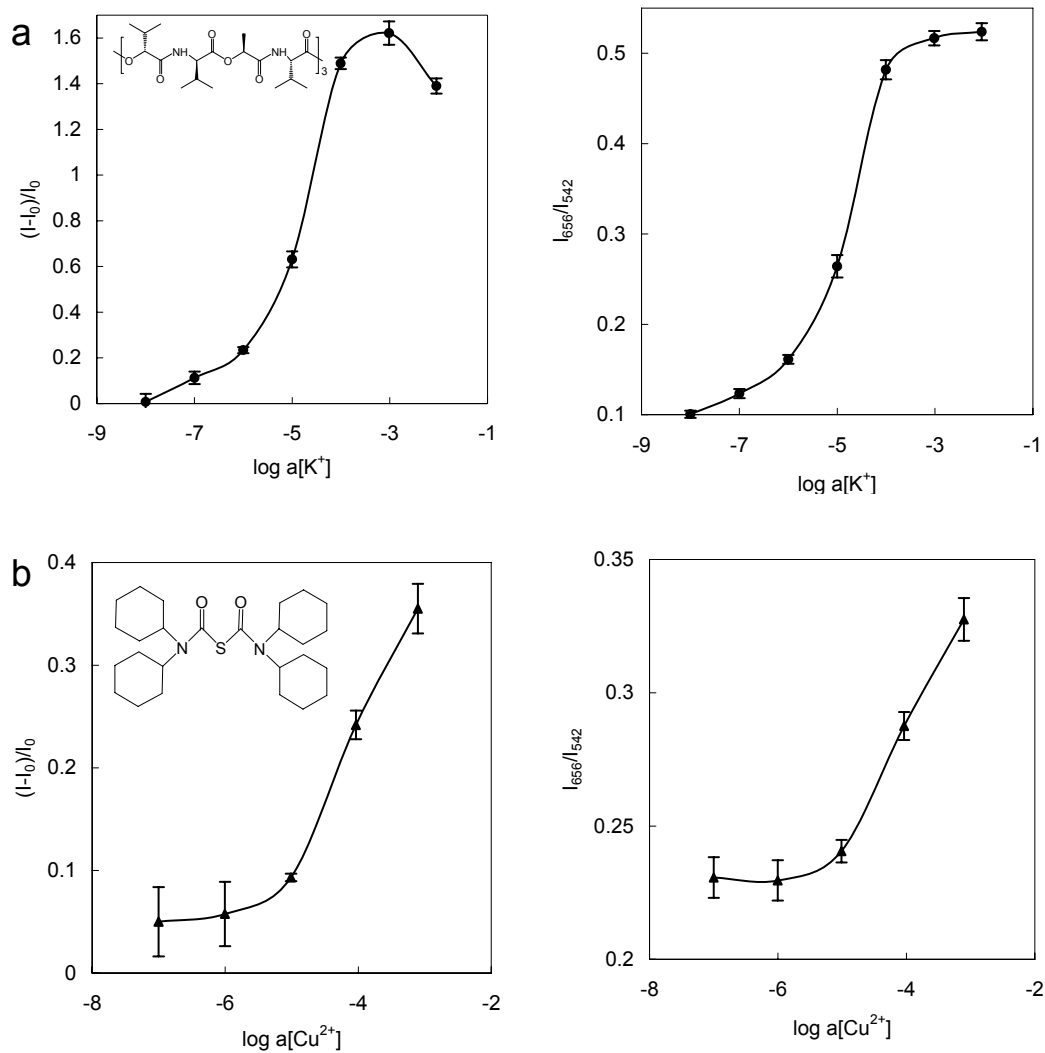


Figure. S4. Response curves of upconverting nanorods based (a) membrane with valinomycin toward K^+ and (b) membrane with N,N,N',N' -tetracyclohexyl-3-thiaglutaric diamide toward Cu^{2+} , by monitoring the luminescent intensity at 656 nm (left column), and the ratio of peak 656 nm to peak 542 nm (right column). I_0 is the intensity of the membrane in a pH 4.8 gly-HCl buffer solution only.