**Supplementary Information**

**Nitrite sensor based on room temperature ionic liquid functionalized α-zirconium phosphate modified glassy carbon electrode**

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FIG. S1. Zeta potential value of α-ZrP nanosheets colloidal suspension



FIG. S2. Effect of pH on the current response and anodic potential at the C16MIM/α-ZrP modified electrode in N2-saturated 0.2 M PBS containing 2.47 mM NaNO2 at a scan rate of 100 mV s-1.



FIG. S3. (a) The oxidation peak currents of ten repetitive determinations on C16MIMBr/α-ZrP/GCE in N2-saturated 0.2 mol and pH 7.4 PBS containing 1.24 mM NaNO2. (b) the oxidation peak currents of five different electrodes containing 1.24 mM NaNO2. (c) the oxidation peak currents of different storage times containing 1.24 mM NaNO2.



FIG. S4. SEM image of C16MIM/α-ZrP after catalyzing nitrite for a period of time.



FIG. S5. The peak currents of 0.25 mM nitrite detected with 100-fold interferential species of AA, MgSO4, glucose, K2CO3, NaCl.