

Highly sensitive sensing of nitrite utilizing bulk-modified an amino-functionalized metal organic framework of type MIL-101(Cr) and with palladium nanoparticles nanocomposite screen-printed electrodes

오철우, A.T. Ezhil vilian¹, 한영규¹, 허윤석[†]
인하대학교; ¹동국대학교
(yunsuk.huh@inha.ac.kr[†])

The authors describe an electrochemical sensor for nitrite that is based on the use of a screen printed carbon electrode modified with palladium nanoparticles and an amino-functionalized metal-organic framework. Nitrite was chosen as a model analyte to evaluate the electron transfer performance of the modified SPCE. Under the optimal conditions, the oxidation current (typically measured at -0.86 V vs Ag/AgCl) increases linearly in the 5 to 150 nM nitrite concentration range, and the detection limit is 1.3 nM. The sensor was applied to the detection of nitrite in (spiked) sausage and pickle samples.