

Supplementary Information

***In situ* metalorganic deposition of silver nanoparticles on gold substrate and square wave voltammetry: a highly efficient combination for nanomolar detection of nitrate ions in sea water**

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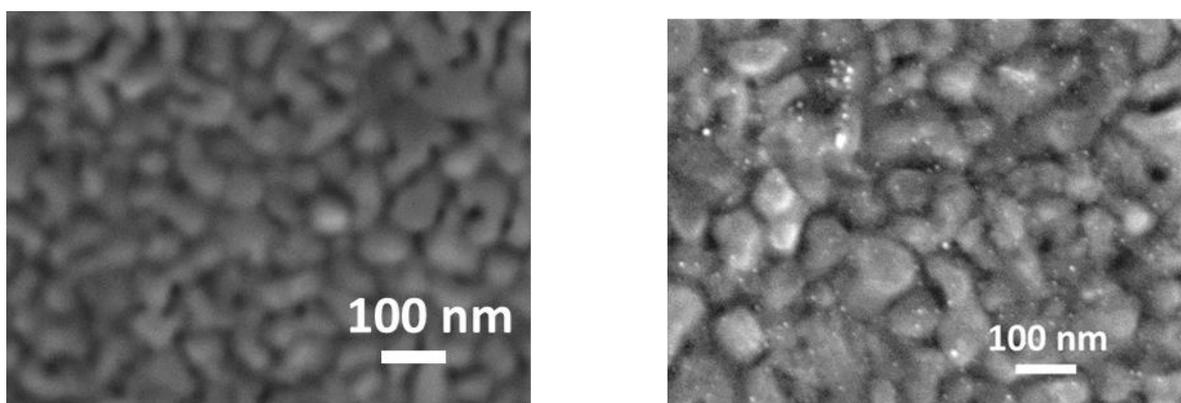


Figure S1. FEG-SEM image of the gold substrate without silver nanoparticles (E_{Au}) and with silver nanoparticles obtained with of $[Ag(amd)] = 0.04 \text{ mol}\cdot\text{L}^{-1}$, duration of $[Ag(amd)]$ decomposition = 1 min.

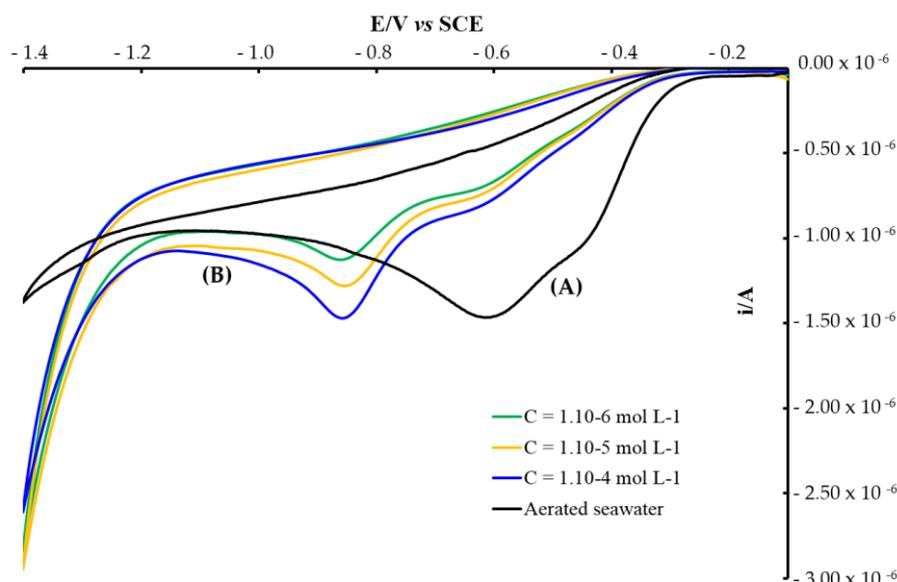


Figure S2. Cyclic voltammograms of aerated artificial sea water on functionalized gold electrode by AgNPs obtained by metalorganic deposition with the optimized conditions, without nitrate ions (A) and with nitrate ions with successive amounts of $10^{-1} \text{ mol}\cdot\text{L}^{-1}$ in artificial sea water. The concentration range of $[NO_3^-]$ is comprised $10^6 \leq [NO_3^-] \leq 10^{-4} \text{ mol}\cdot\text{L}^{-1}$ (B). Start potential -0.10 V and end potential -1.3 V . Artificial sea water, $[NaCl] \sim 0.6 \text{ mol}\cdot\text{L}^{-1}$; pH 6.0, scan rate: $0.100 \text{ V}\cdot\text{s}^{-1}$.

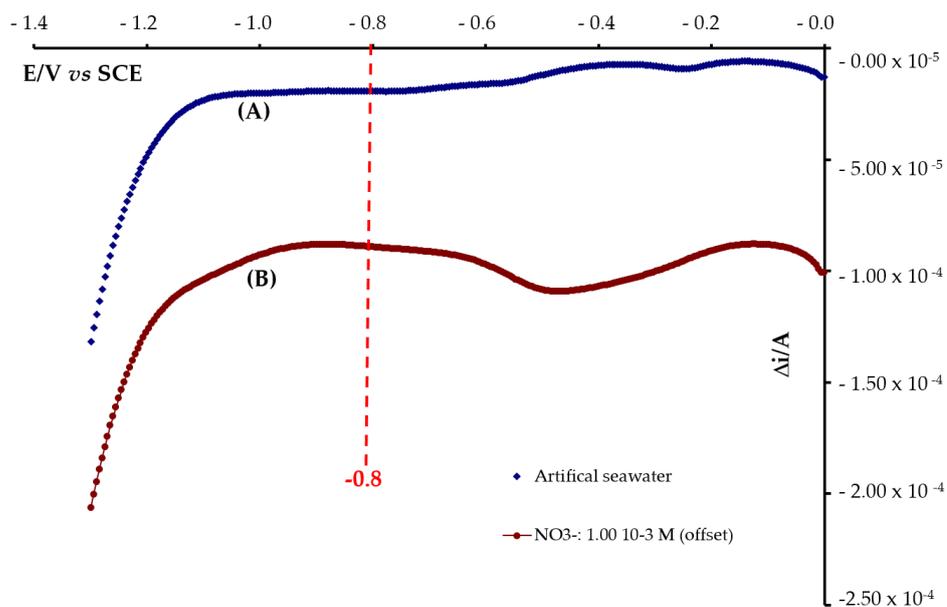


Figure S3. Square wave voltammograms of aerated artificial sea water on bare gold electrode without nitrate ions (A) and with nitrate ions, $[\text{NO}_3^-] = 10^{-3} \text{ mol}\cdot\text{L}^{-1}$ (B). Start potential -0.10 V and end potential -1.3 V. Artificial sea water, $[\text{NaCl}] \sim 0.6 \text{ mol}\cdot\text{L}^{-1}$; pH 6.0, scan rate: $0.100 \text{ V}\cdot\text{s}^{-1}$.