

Supplementary Materials

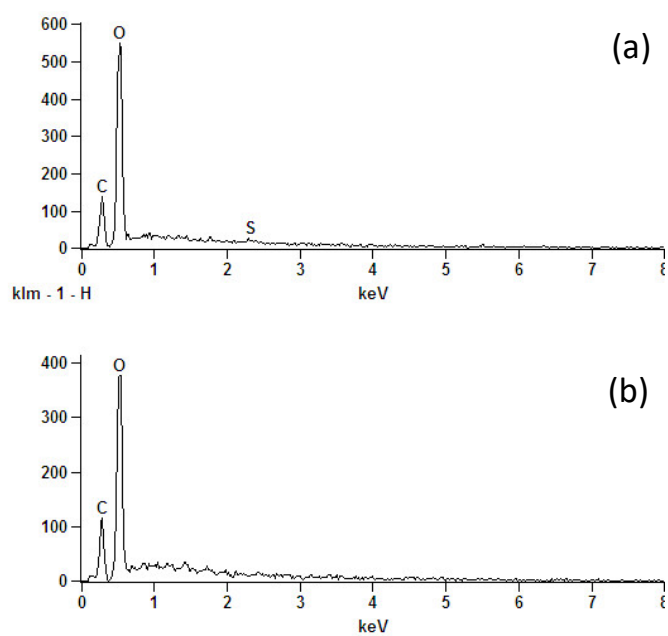


Figure S1. EDS images of (a) IIP-CH₃Hg⁺ and (b) NIP.

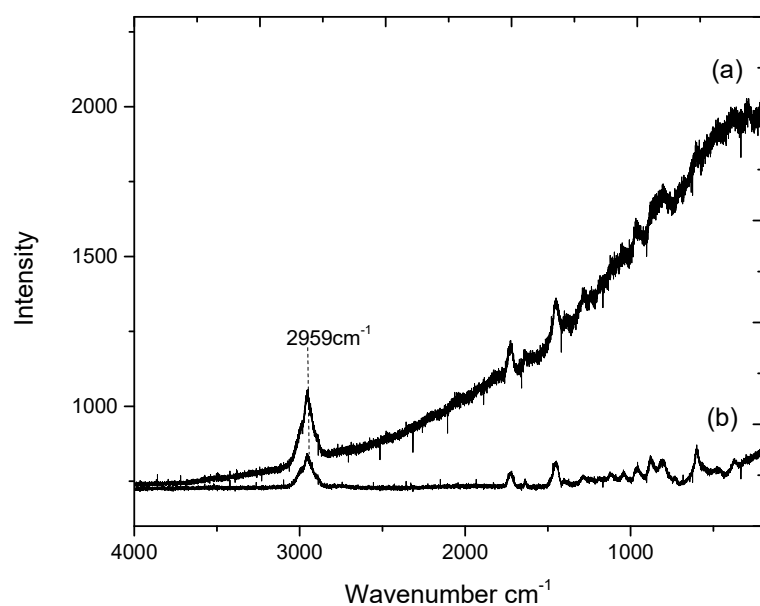


Figure S2. Raman spectrum of (a) IIP- CH_3Hg^+ and (b) NIP.

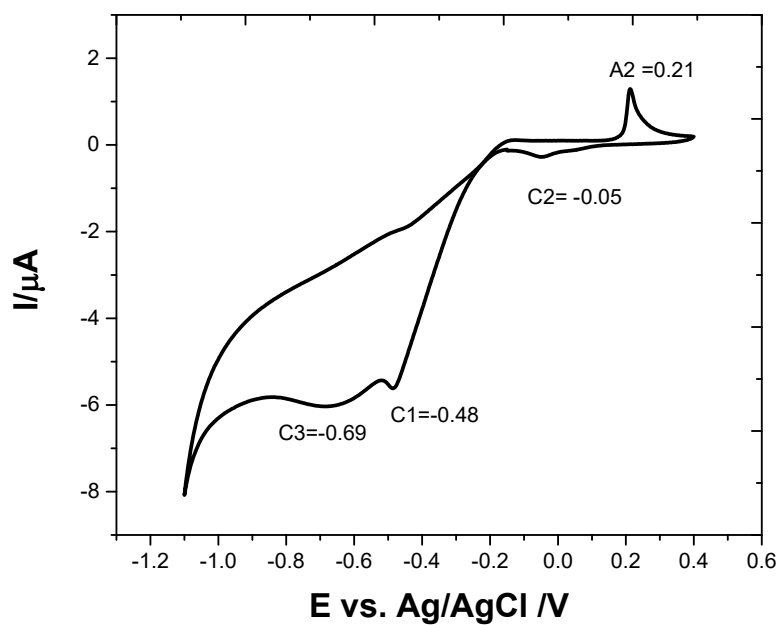


Figure S3. Cyclic voltammetry of CPE applied in a solution containing $1000\text{ }\mu\text{g L}^{-1}$ CH_3Hg^+ and 0.05 mol L^{-1} HCl , recorded at 0.1 V s^{-1}

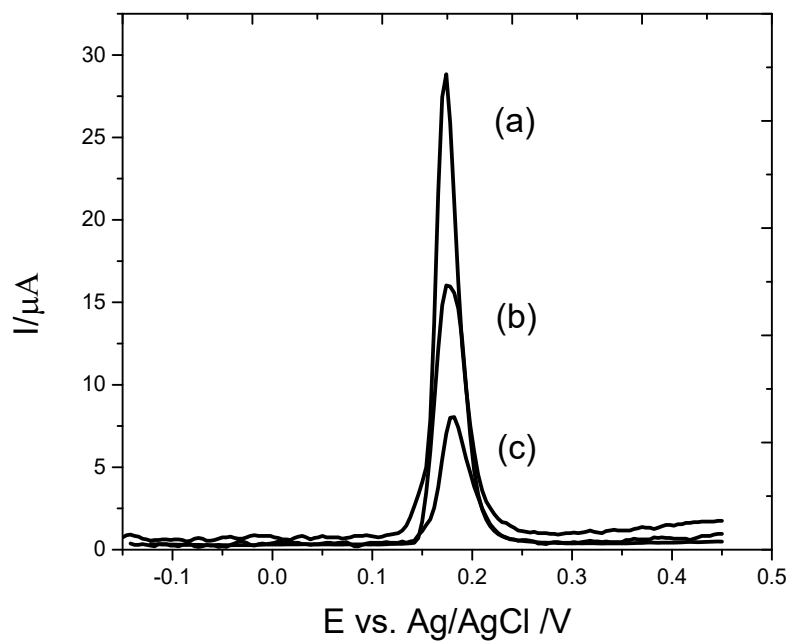


Figure S4. DPSV responses obtained from the application of $1000\text{ }\mu\text{g L}^{-1}\text{ CH}_3\text{Hg}^+$ in $0.05\text{ mol L}^{-1}\text{ HCl}$ solution for (a) CPE/MWCNTs/IIP- CH_3Hg^+ , (b) CPE/MWCNTs/NIP and (c) CPE electrodes. Deposition potential: -0.8 V (vs. Ag/AgCl); deposition time: 500 s.

Table S1. Composition of working electrodes prepared in this work.

Nomenclature	Composition
CPE	Graphite (100%)
CPE/IIP- CH_3Hg^+	Graphite (80%), IIP- CH_3Hg^+ (20%)
CPE/MWCNTs/IIP- CH_3Hg^+	Graphite (70%), MWCNTs (10%), IIP- CH_3Hg^+ (20%)
CPE/MWCNTs/NIP	Graphite (70%), MWCNTs (10%), NIP (20%)

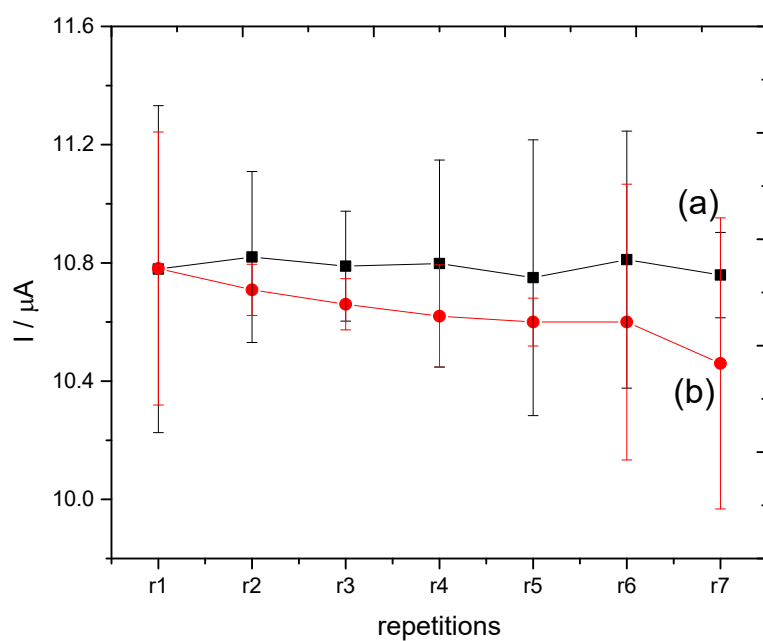


Figure S5. (a) Analysis of repeatability and (b) reusability of the proposed sensor using CH_3Hg^+

Table S2. Estimation of the experimental RSD and Horwitz to evaluate the precision in terms of repeatability and reproducibility

	repeatability	reproducibility
$\% \text{RDS}_{\text{experimental}}^1$	0.981	1.981
$\% \text{RDS}_{\text{Horwitz}}^2$	9.14	3.179

$$\% \text{RSD}_{\text{experimental}}^1 = (\text{standard deviation}) * 100 / \text{Mean}$$

$$\% \text{RSD}_{\text{Horwitz}}^2 = 2 (2^{1-0.5(\text{Log concentration})}) / 3$$