Supplementary Information

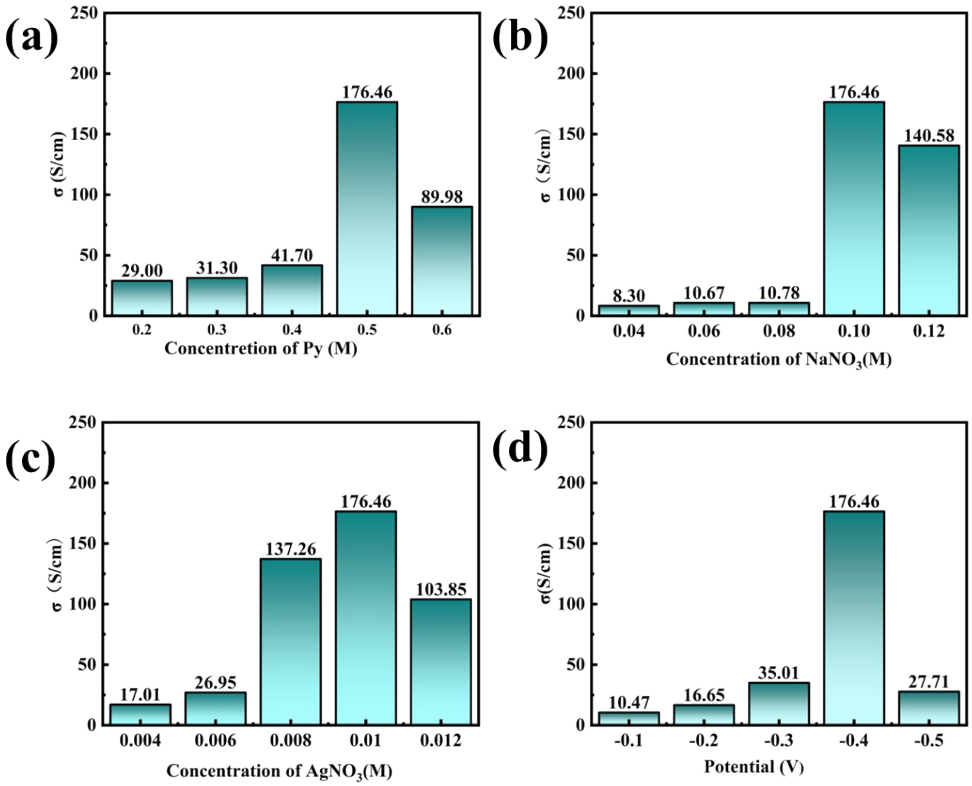

Fig. S1. The influence factor in bn-Ag@PPy/BC preparation: the conductivity of bn-Ag@PPy/BC with (a) different concentration of Py in polymerization of PPy on BC, (b) different concentration of $NaNO_3$ in electrochemical deposition of Ag, (c) different concentration of $AgNO_3$ in electrochemical deposition of Ag and (d) deposition potential in electrochemical deposition of Ag

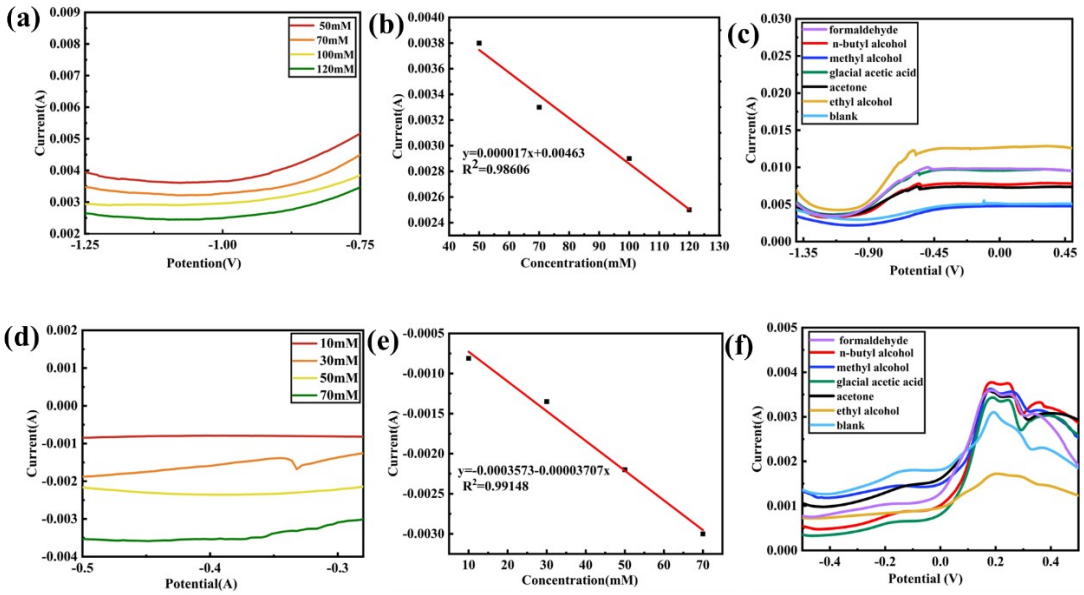

Fig. S2. (a) Differential pulse voltammetry (DPV) curves of bn-Ag@PPy/GPE with graphite substrate to different concentrations of HCHO (from 50 mM to 120 mM); (b) The linear relational graph of concentrations vs peak current; (c) bn-Ag@PPy/GPE sensor selectivity plots: DPV plots for different interferents; (d) Differential pulse voltammetry (DPV) curves of bn-Ag@PPy/ITO with ITO substrate to different concentrations of HCHO (from 10 mM to 70 mM); (e) The linear relational graph of concentrations vs peak current; (f) bn-Ag@PPy/ITO sensor selectivity plots: DPV plots for different interferents.

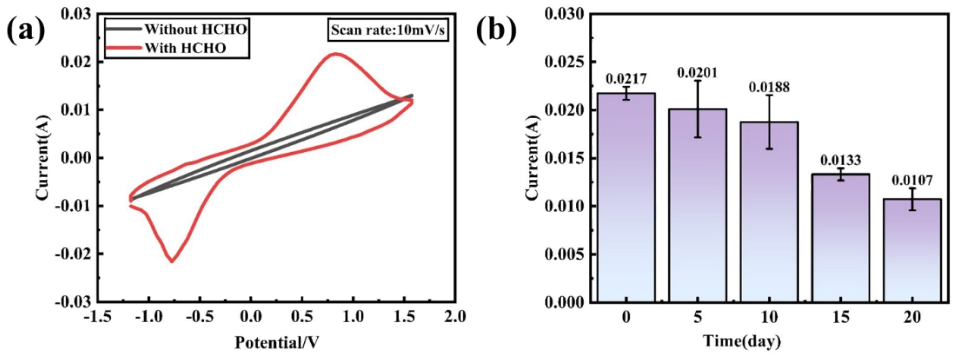

Fig. S3. (a) Cyclic voltammetry(CV) curves of bn-Ag@PPy/BC with and without 10mM HCHO; (b)The response value of peak current in CV of bn-Ag@PPy/BC for different storage time.

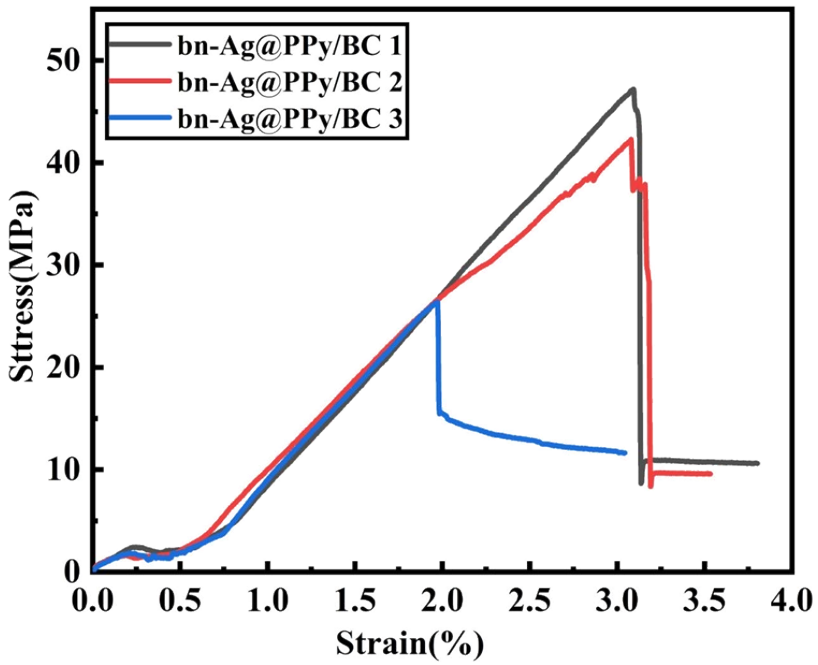

Fig. S4. Tensile stress-strain curves of bn-Ag@PPy/BC