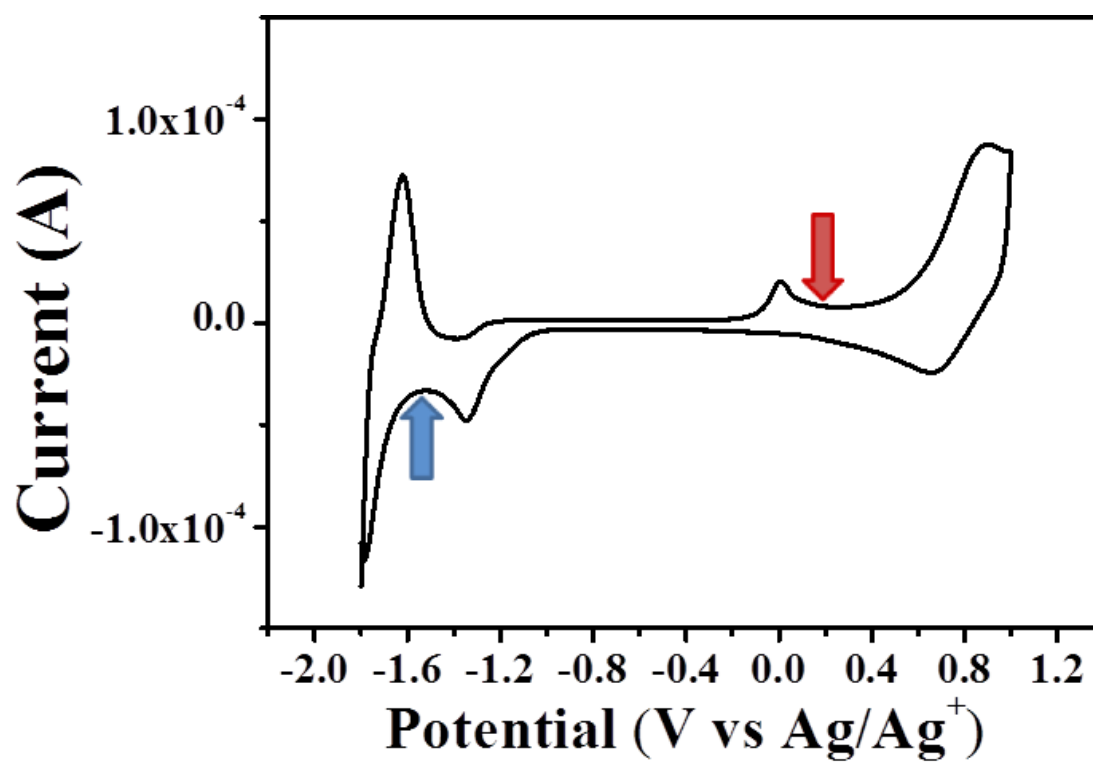


Supporting 1 Au nanoparticles synthesized in the present work were characterized using Transmission electron microscopy (TEM).



Supporting 2 Cyclic voltammetry (CV) data of PTB7-F20. It was found that the energy positions of Highest Occupied Molecular Orbital (HOMO) and Lowest Unoccupied Molecular Orbital (LUMO) of PTB7-F20 are between the respective values PTBF0 (without F, X=0, see Fig. 1) and PTBF1 (with F, X=1, See Fig. 1).<sup>9,11</sup>