Supplementary Materials

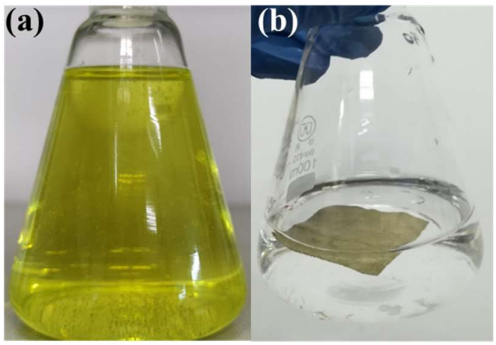


Figure S1. Photograph of 4-NP/$NaBH_4$/PVDF-1-2 system (a) before and (b) after reaction.

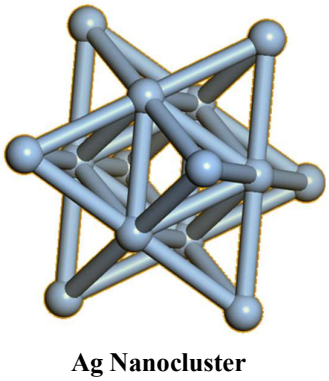


Figure S2. Optimized structure of Ag Nanocluster.

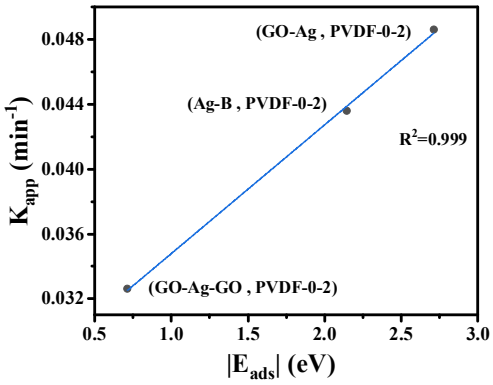


Figure S3. Plot of K_{app} values of different component hybrid membranes versus corresponding models' E_{ads} for 4-NP$^-$.



Figure S4. Photographs of Ag-GO suspension.