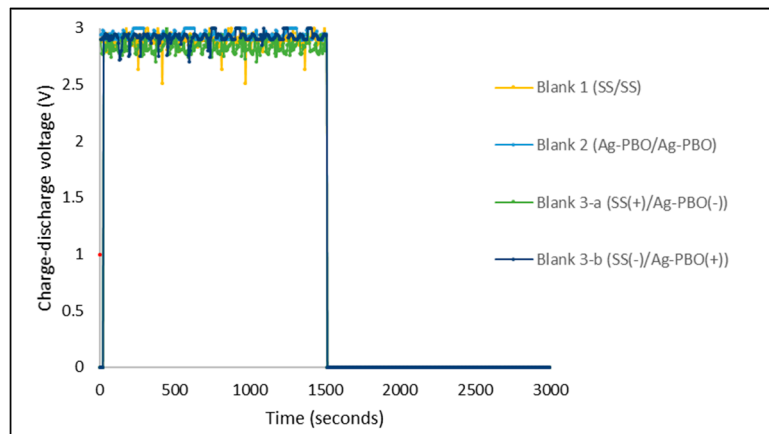


**Supplementary Figure 1:** Chemical structure of PEDOT:PSS [19]



**Supplementary Figure 2:** Charge-discharge characteristics of blank devices (without PEDOT:PSS) using various electrodes (SS/SS, Ag-PBO/Ag-PBO, SS(+)/Ag-PBO(-), and SS(-)/Ag-PBO(+)), each charged at 3 volt.