

Supporting Information for

Topological Insulator Bi₂Se₃ Based Electrochemical Aptasensor for the Application of Sensitive Detection of Interferon- γ

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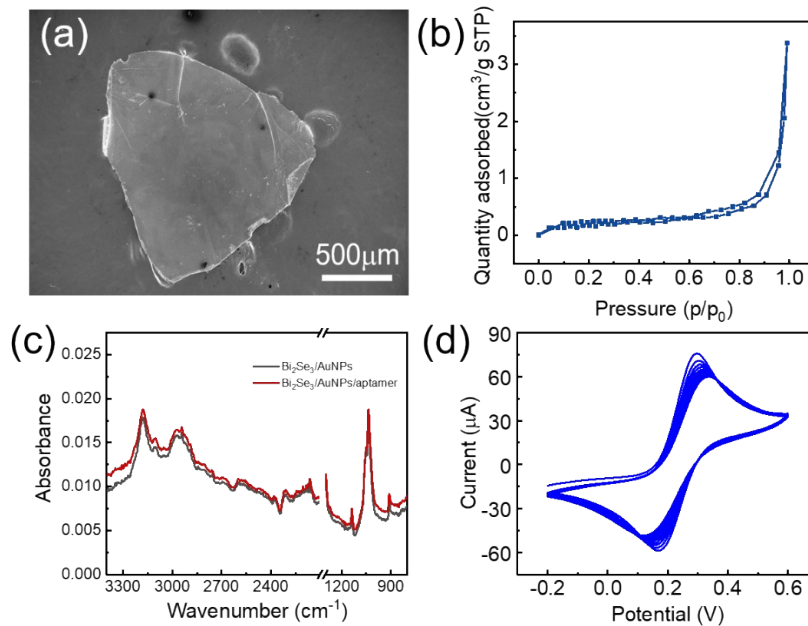


Fig. S1 (a) SEM image of Bi_2Se_3 single crystal. (b) N_2 adsorption-desorption isotherm curve of Bi_2Se_3 single crystal. (c) FTIR image of $\text{Bi}_2\text{Se}_3/\text{AuNPs}$ and $\text{Bi}_2\text{Se}_3/\text{AuNPs}/\text{aptamer}$. (d) The electrochemical stability of $\text{Bi}_2\text{Se}_3/\text{AuNPs}$ electrode by repeated CV.

The surface area and porosity of Bi_2Se_3 were measured by BET model in Fig. S1(b). The FTIR was applied to estimate that the aptamer got immobilized on the electrode surface (Fig. S1 (c)). However, due to the small amount of the aptamer on the surface of the Bi_2Se_3 , the signal variation is slightly. In order to justify the electrochemical stability of the $\text{Bi}_2\text{Se}_3/\text{AuNPs}$ electrode, the repeated CV were used for evaluation (Fig. S1 (d)).

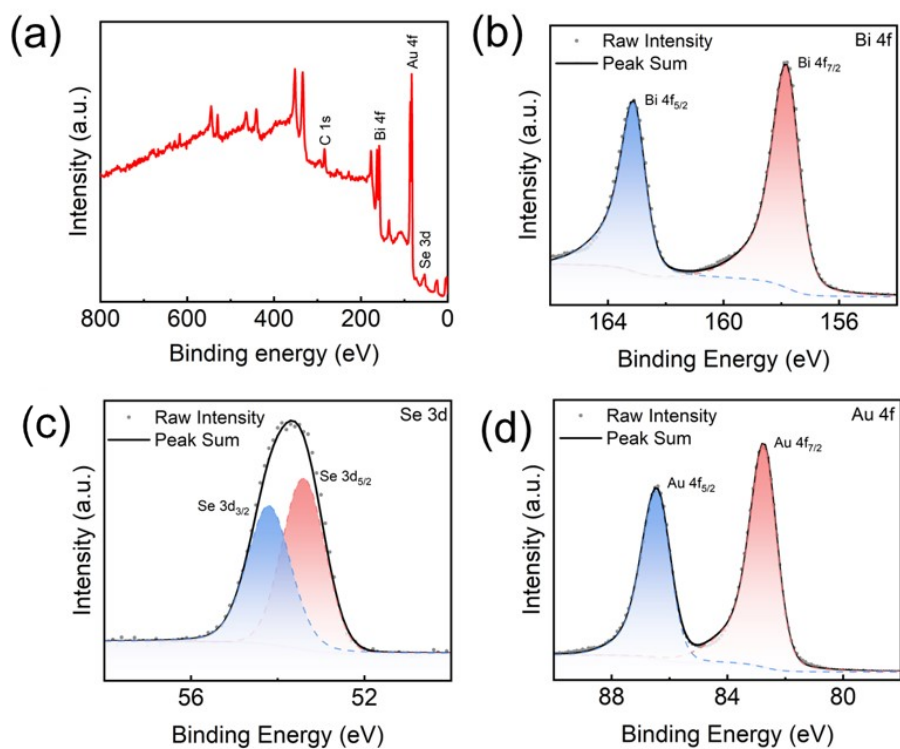


Fig. S2 XPS spectra of $\text{Bi}_2\text{Se}_3/\text{AuNPs}$ surface. (a) survey scan spectrum and core levels of (b) Bi 4f (c) Se 3d (d) Au 4f.

By XPS analysis, the surface electronic state and composition of $\text{Bi}_2\text{Se}_3/\text{AuNPs}$ sheets were investigated. Fig. S2 reveals the XPS spectra of $\text{Bi}_2\text{Se}_3/\text{AuNPs}$ which include the elements of Bi, Se and Au.