



## Supplementary Materials: A Triple-Band Hybridization Coherent Perfect Absorber Based on Graphene Metamaterial

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Note S1: the comparison of results with and without ion-gel layer

In order to illustrate ion-gel pattern which was omitted to simplify the calculation, we add nondispersive permittivity  $\varepsilon_i$  of ion-gel is  $\varepsilon_i$ =1.82, and thickness is 20 nm. And we set all of other structure parameter is consistent with Figure 1. Then, we fix the  $E_f$ =0.8 eV, and the relationship of absorption and frequency, with and without ion-gel is shown in Figure S1. We can give a conclusion ion-gel has little effect on the simulation results and we omit ion-gel to simplify the calculation.



Figure S1. The relationship of absorption and frequency, with and without ion-gel.