

## Supporting Information

### In-situ Grown of Polyphosphazene Nanoparticles on Graphene sheets as Highly Stable Nanocomposite for Metal-Free Lithium Anode

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Tab. S1 BET surface of the PPN/GN and GN

| sample | specific surface area ( $\text{m}^2 \text{g}^{-1}$ ) |
|--------|------------------------------------------------------|
| PPN/GN | 443.6                                                |
| GN     | 342.9                                                |

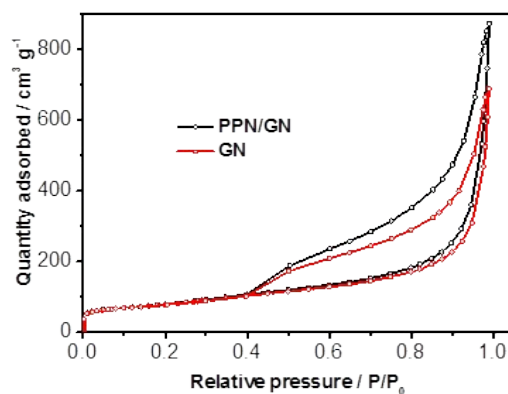


Fig. S1 N<sub>2</sub> adsorption/desorption isotherms

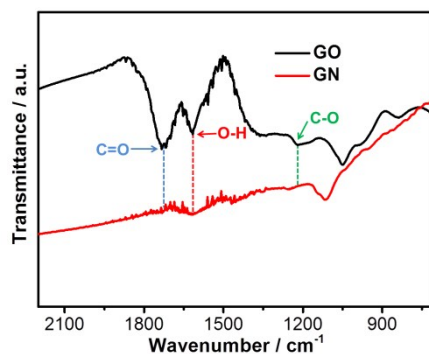


Fig. S2 FT-IR patterns of (a) GN and (b) GO

Tab. S2 Elemental composition of PPN/GN and GO

| Element | PPN/GN (at%) | GO (at%) |
|---------|--------------|----------|
| C1s     | 87.04        | 81.51    |
| O1s     | 10.54        | 18.49    |

|     |      |   |
|-----|------|---|
| N1s | 1.95 | — |
| P2p | 0.47 | — |

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