Supporting Information

**Metallic VS$_2$ Monolayer: A Promising 2D Anode Material for Lithium Ion Batteries**

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**Figure S1.** Energetically favorable Li adsorption site (T site) on MoS$_2$ monolayer (a) and the Li diffusion barrier from T site to H site (b).

**Figure S2.** DOS of single-layered MoS$_2$ (a) and Li$_{0.125}$MoS$_2$ (b), and the band structure of MoS$_2$ monolayer (c).