Supporting Information

Encapsulation of cathode in lithium-sulfur batteries with a novel two-dimensional carbon allotrope: DHP-graphene

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The following three figures show the crystal structures and phonon dispersions of HHPG-L, HHPG-Z and OHPG. Distinct imaginary frequencies show their dynamic instabilities.

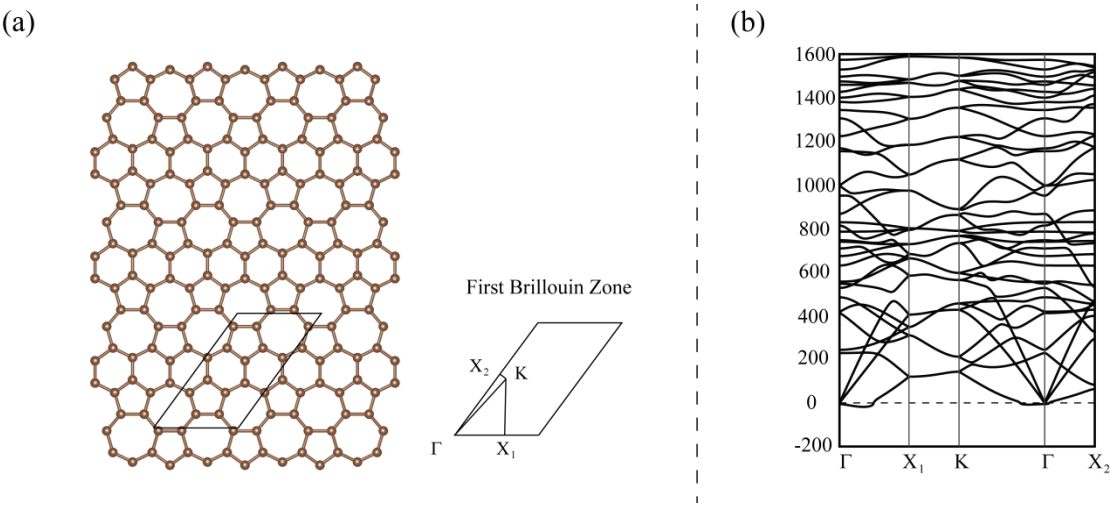

Fig. S1. (a) Two-dimensional crystal structure of HHPG-L and its first Brillouin Zone. (b) Phonon dispersion along the typical directions.

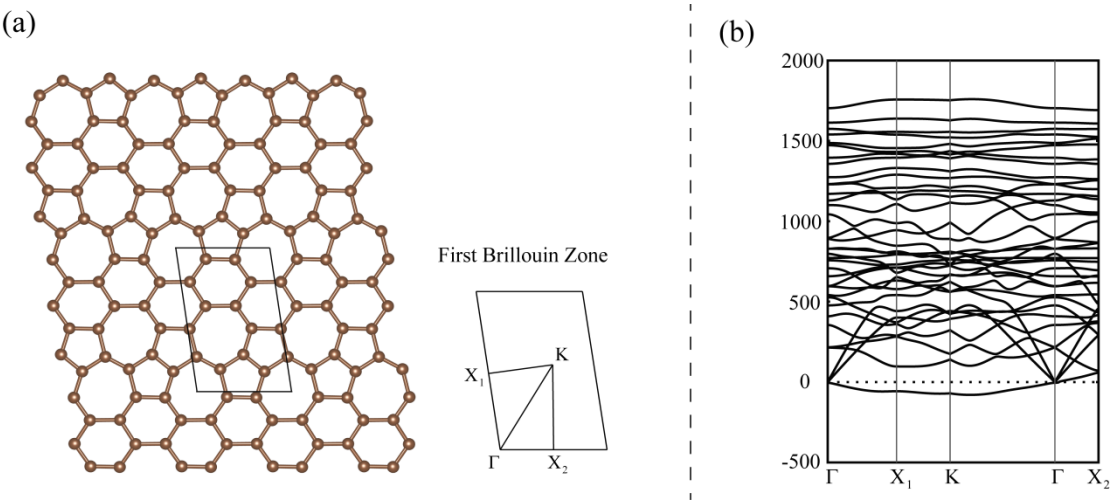

Fig. S2. (a) Two-dimensional crystal structure of HHPG-Z and its first Brillouin Zone. (b) Phonon dispersion along the typical directions.

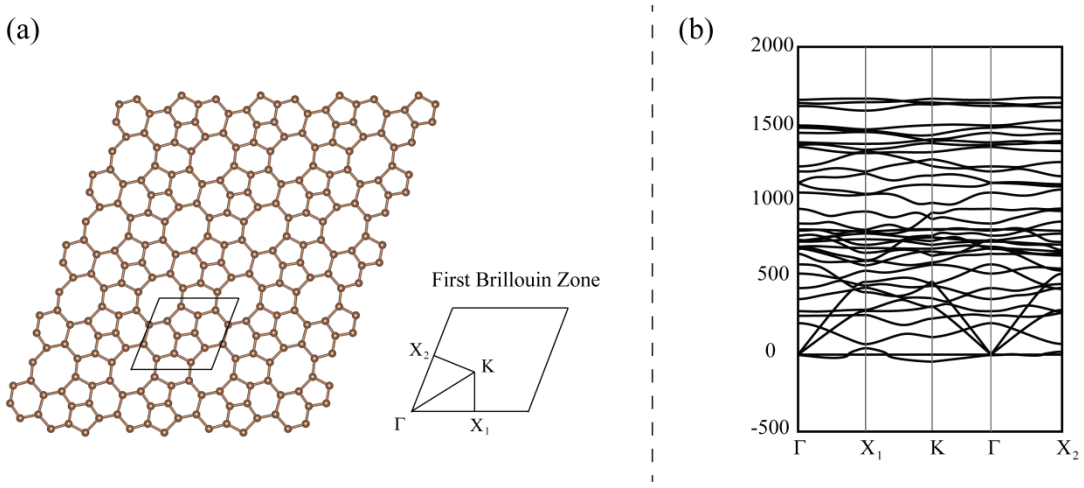

Fig. S3. (a) Two-dimensional crystal structure of OHPG and its first Brillouin Zone. (b) Phonon dispersion along the typical directions.