Supporting Information

Mo$_2$C-embedded biomass-derived honeycomb-like nitrogen-doped carbon nanosheet/graphene aerogel films for highly efficient electrocatalytic hydrogen evolution

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**Fig. S1** The crystal structure of hexagonal Mo$_2$C.

**Fig. S2** The TGA curves for Mo$_2$C@N-DC/G-5 aerogel films.

**Fig. S3** SEM images of cross-sections of the N-DC/G aerogel films at different magnifications.
**Fig. S4**  (c) Cyclic voltammograms curves of commercial Pt/C at different scan rates from 5 to 160 mV s$^{-1}$, respectively. (d) The capacitive currents at 0.22 V vs. RHE as a function of scan rate for Pt/C. The $C_{dl}$ of electrocatalysts were confirmed by the slope of the fitted line.

**Fig. S5** Calculated exchange current density for Mo$_2$C@N-DC/G in 0.5 M H$_2$SO$_4$.

**Figure S6.** SEM images of Mo$_2$C@N-DC/G-5 after being used for 15 h in HER for stability test in 0.5M H$_2$SO$_4$. 