Encapsulating Ca₂Ge₇O₁₆ nanowires within graphene sheets as anode materials for lithium-ion batteries

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Figure S1. TG results of a) pure Ca₂Ge₇O₁₆ and b) Graphene.¹



Figure S2. The screenshot of Figure 4b in our manuscript and the enlarged part indicating the [001] growth direction of $Ca_2Ge_7O_{16}$ within graphene sheets.



Figure S3. The low- and high-magnification HRTEM images of $Ca_2Ge_7O_{16}$ nanowires within graphene sheets, which indicates the [001] growth direction of $Ca_2Ge_7O_{16}$ nanowires within graphene sheets.



Figure S4. Cyclic voltammetry curves within the potential window of 0-3 V of the pristine $Ca_2Ge_7O_{16}$ (scan rate: 0.1 mV s⁻¹).



Figure S5. XRD pattern of the pristine Ca₂Ge₇O₁₆ nanowires without adding graphene.



Figure S6. FESEM images of the pristine Ca₂Ge₇O₁₆ nanowires.



Figure S7. Digital photo: the Ca₂Ge₇O₁₆ nanowires/graphene sheets electrode after 330 discharge/charge cycles.



Figure S8. TEM image and its corresponding EDX spectrum of the hybrid $Ca_2Ge_7O_{16}$ nanowires/graphene sheets electrode after 330 discharge/charge cycles at a current density of 500 mA g⁻¹.



Figure S9. The EIS result of $Ca_2Ge_7O_{16}$ anode after 50 cycles.

Reference:

1 T. Lv, X. Li, J. Ma, RSC Adv., 2014, 4, 49942-49945.