Electronic Supplementary Material (ESI) for Materials Chemistry Frontiers.

Controlled Growth of 2D/2D Heterojunction for High-Performance Sodium Ion Storage

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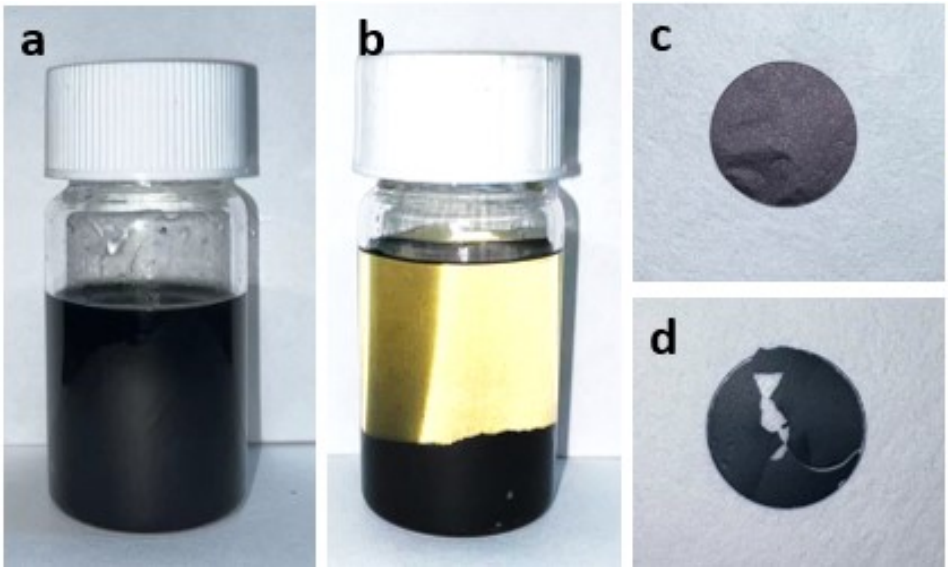


Figure S1. Photo of $Ti_3C_2T_x$ before and after GDY modification. a) $Ti_3C_2T_x$ soluton before GDY modification, b) $Ti_3C_2T_x$ soluton after GDY modification, c) binder-free electrode of $Ti_3C_2T_x$, d) binder-free electrode of $Ti_3C_2T_x$@GDY.

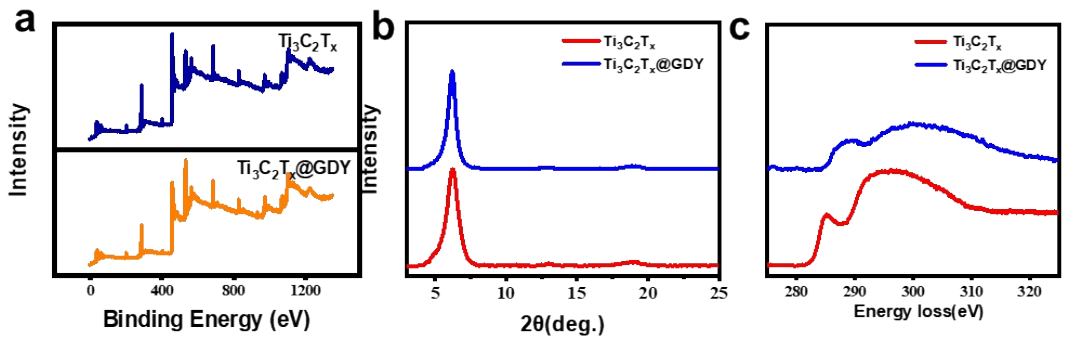
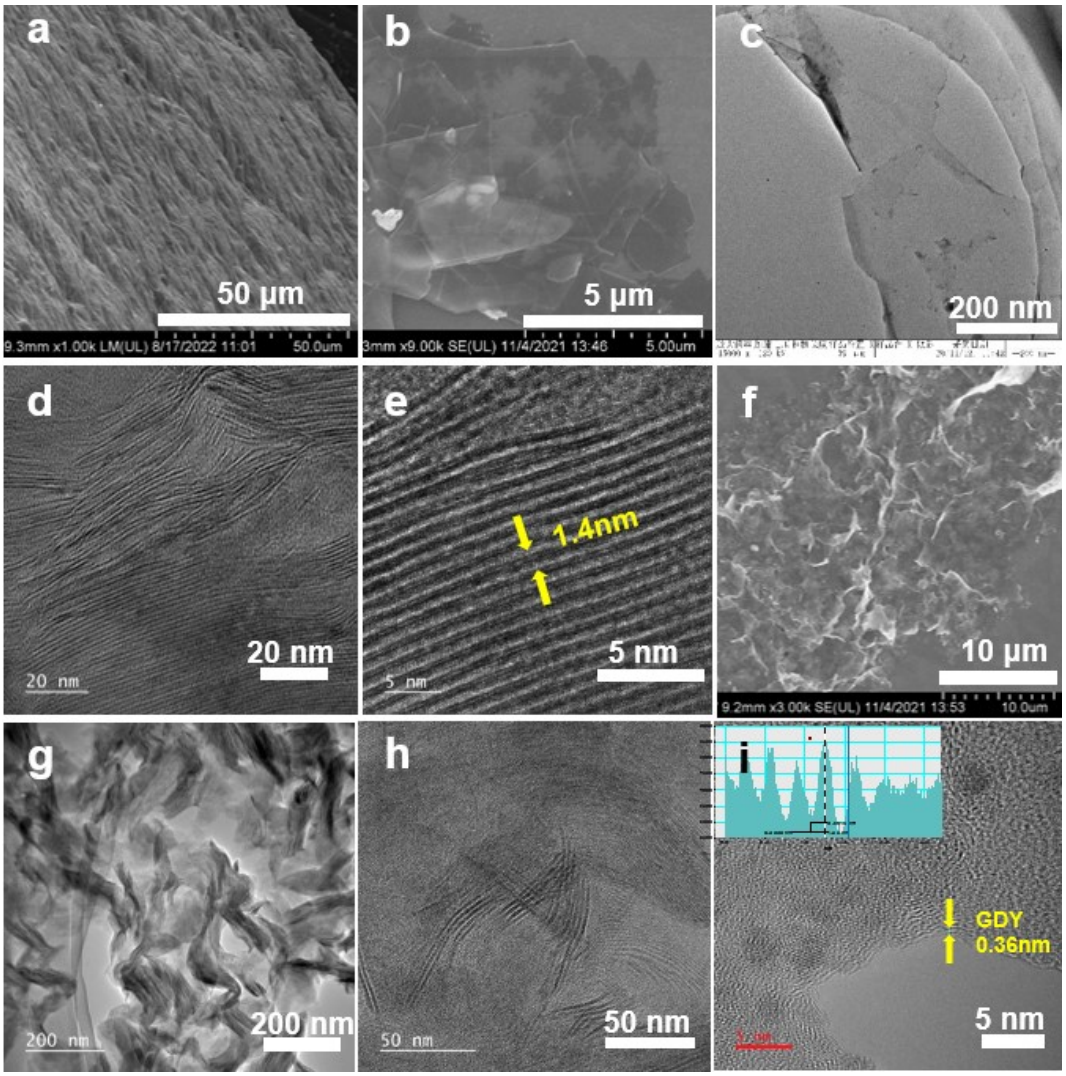


Figure S2. a) XPS spectra of $Ti_3C_2T_x$ and $Ti_3C_2T_x$@GDY, b) XRD patterns of $Ti_3C_2T_x$ and $Ti_3C_2T_x$@GDY, c) the energy loss spectra of C element.



Figuer S3. a)-b) SEM and c)-e) TEM images of the pristine $Ti_3C_2T_x$ nanosheets; f) SEM and g-i) TEM image of $Ti_3C_2T_x$@GDY, inset in i is the interlayer distance of GDY.

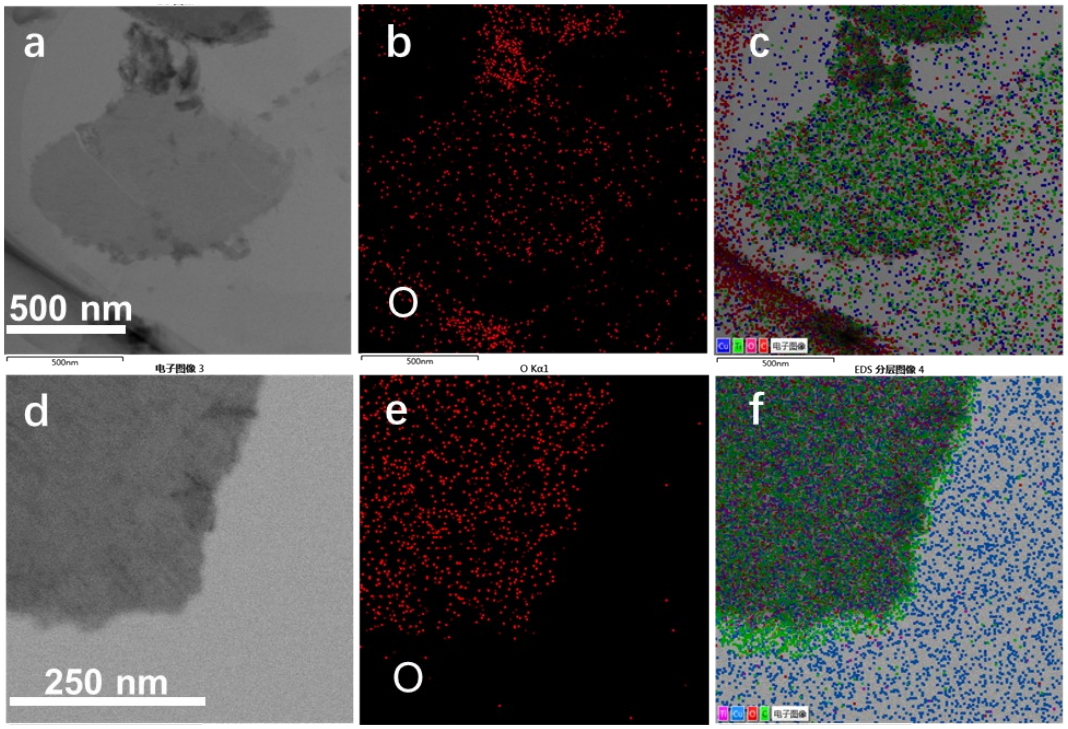


Figure S4. a)-c) the C elemental distribution and superposition of elements of bare $Ti_3C_2T_x$, d)-f) the elemental distribution images of $Ti_3C_2T_x$@GDY and superposition of elements of bare $Ti_3C_2T_x$.

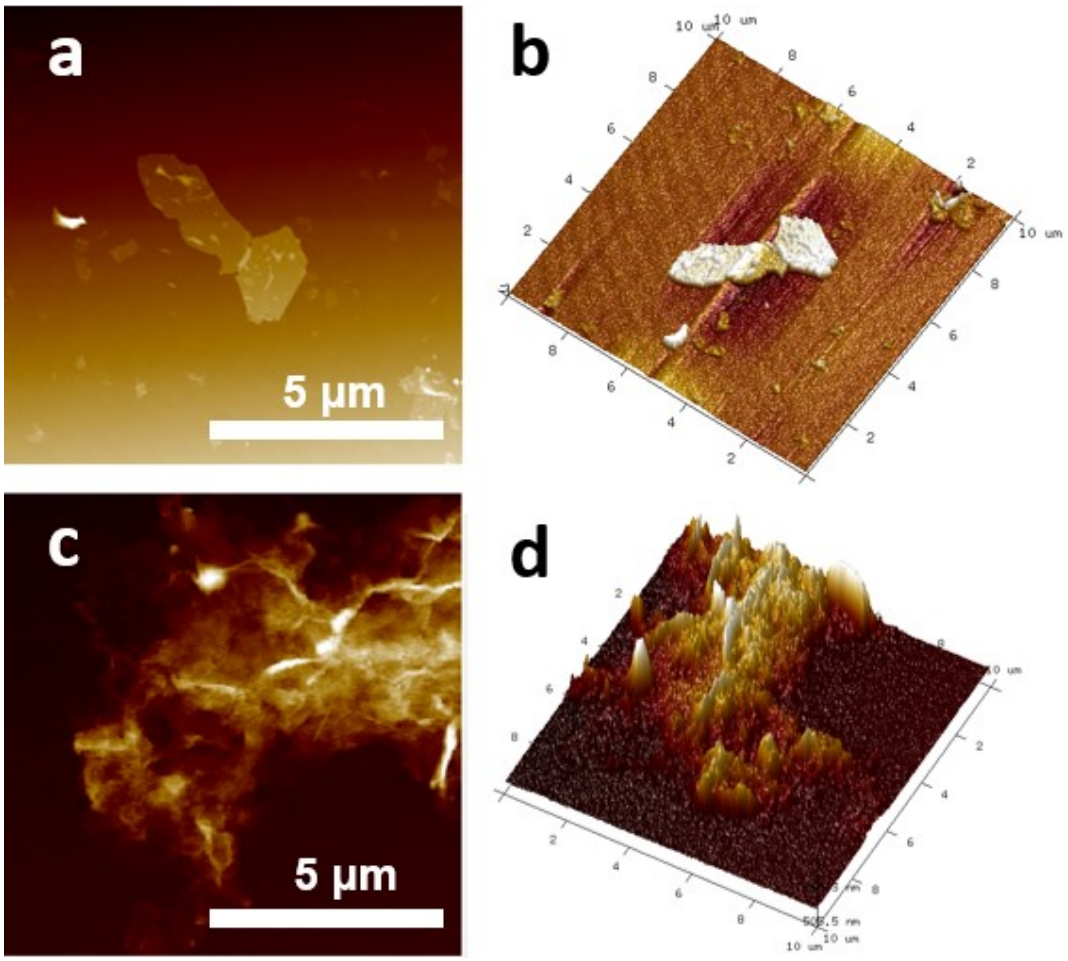


Figure S5. a) 2D and b) 3D AFM images of the $Ti_3C_2T_x$; c) 2D and d) 3D AFM images of the $Ti_3C_2T_x$@GDY.

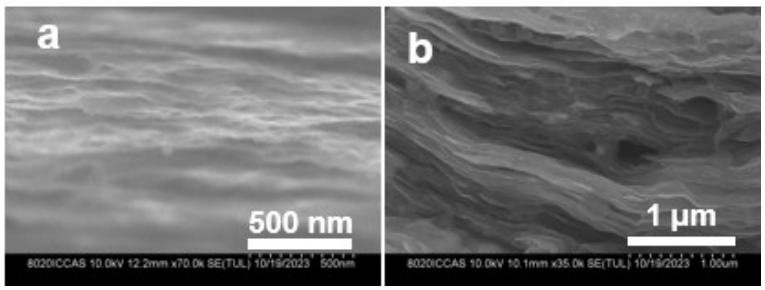
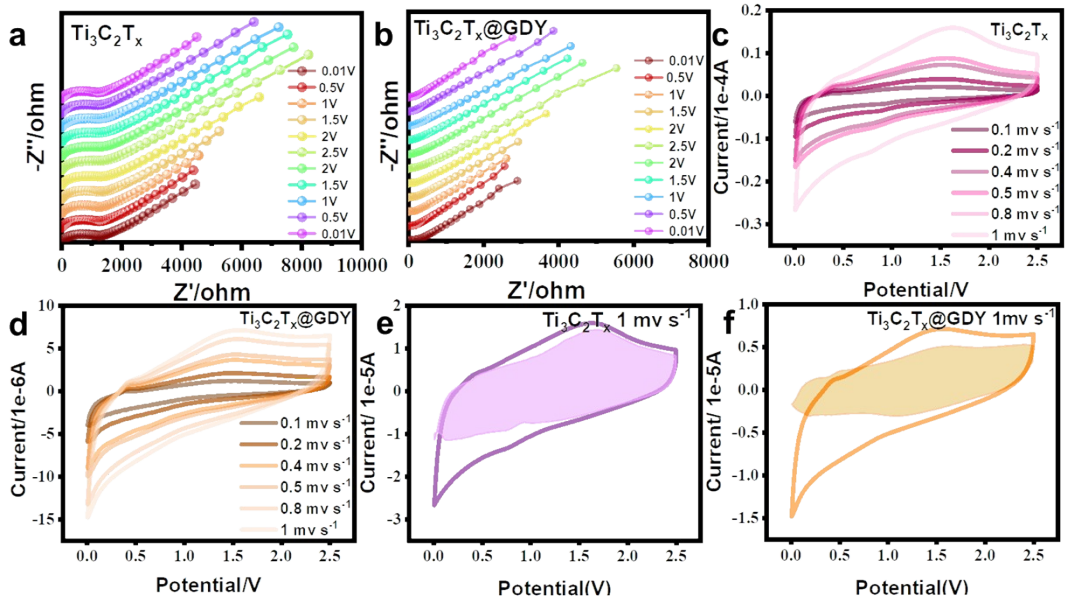
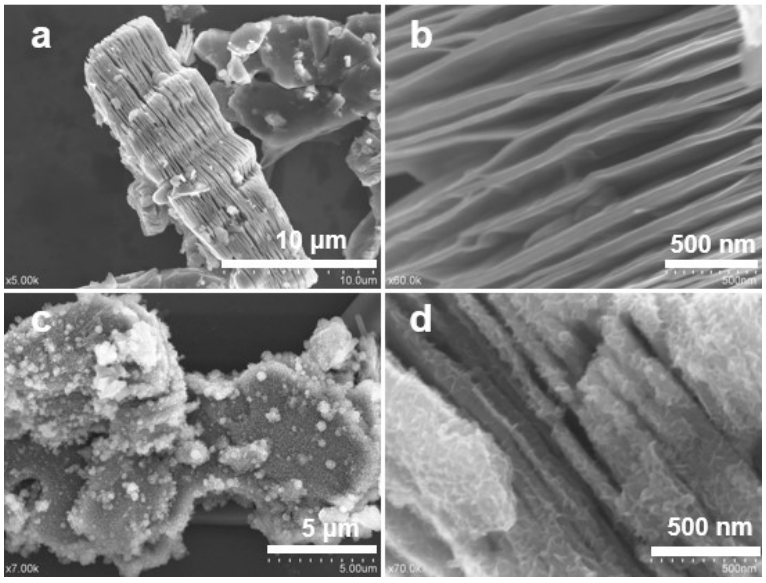


Figure S6. SEM images of the structure after the long-term cycling in a) $Ti_3C_2T_x$ and b) $Ti_3C_2T_x$@GDY.



Fifure S7. Electrochemical impedance spectroscopy of a) $Ti_3C_2T_x$ and b) $Ti_3C_2T_x$@GDY at different voltages in the charging and discharging processes; CV curves at diverse sweeping rate of c) $Ti_3C_2T_x$ and d) $Ti_3C_2T_x$@GDY, respectively. The capacitive contribution of e) $Ti_3C_2T_x$ and f) $Ti_3C_2T_x$@GDY at 1mv s^{-1}, respectively.



Fifure S8. a) and b) the SEM images of the b-$Ti_3C_2T_x$, c) and d) the SEM images of the b-$Ti_3C_2T_x$@GDY.