

Supplementary Materials:

Low-Temperature Synthesis of Nanoporous Titanium Carbide/Carbon Composite Aerogel

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Preparation of C aerogel

C/TiO₂ aerogel was placed above the corrosive solution mixed with 40 mL EtOH and 1 mL HF for 3 days (as shown in Figure S1a) for the entire corrosion of TiO₂ by HF vapor. It was repeatedly washed by ethyl alcohol every 2 h for more than 6 times and dried by CO₂ supercritical fluid. Figure S1 displays the Raman spectrum, SEM image and EDX spectrum of the final sample after the corrosion treatment. The results indicated that C aerogel was successfully obtained due to the absence of TiO₂, and it maintained the excellent nanoporous network structure.

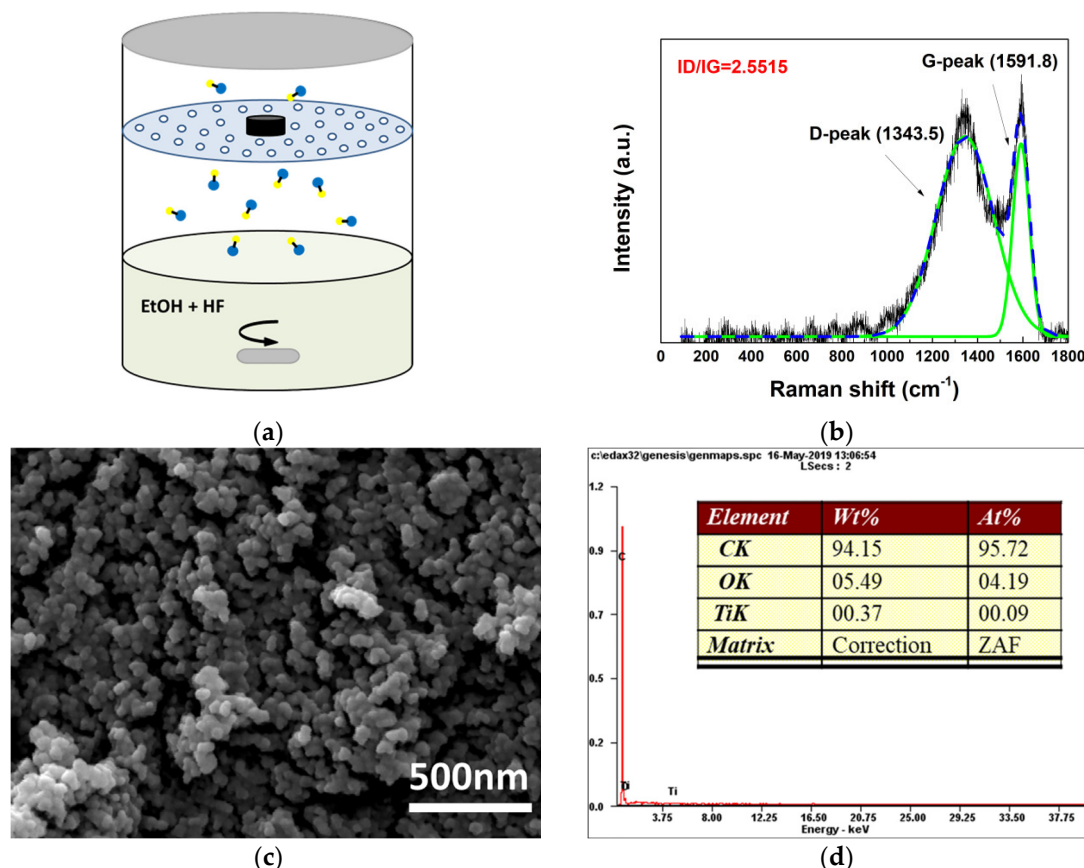


Figure S1. (a) The corrosion of C/TiO₂ aerogel with HF; (b) Raman spectrum; (c) SEM image; (d) EDX spectrum of C aerogel.

Photothermal conversion

The following figures show the first derivative curves at the beginning and the ending of illumination within 1 s to compare the response speeds of different aerogels at different light intensities. The temperature variations within 54 s before the ending of illumination were also amplified to examine the equilibrium temperature. In Figure S2d, C aerogel is considered as the reference.

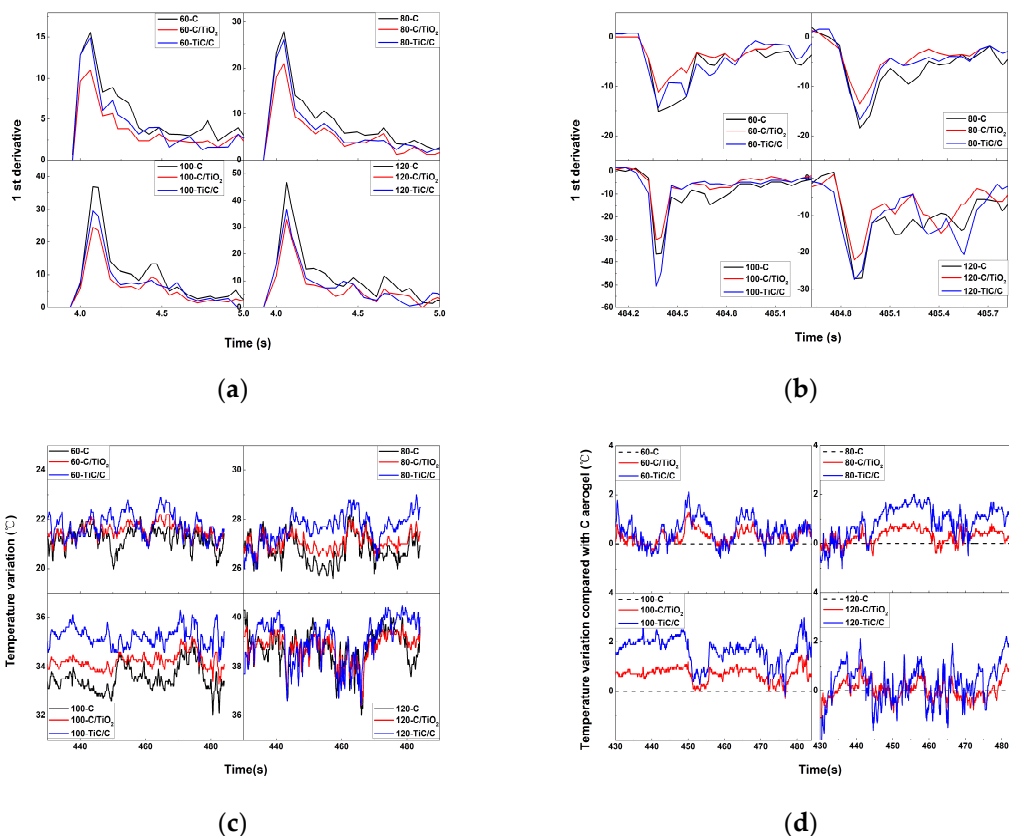


Figure S2. The 1st derivative curves at the beginning (a) and the ending (b) of illumination within 1 s; (c) the comparisons of temperature variation within 54 s before the ending of illumination; (d) the difference of temperature variation compared to C aerogel within 54 s before the ending of illumination.