Supporting Information

Hierarchical porous carbon fibers/carbon nanofibers monolith from electrospinning/CVD processes as high effective surface area support platform

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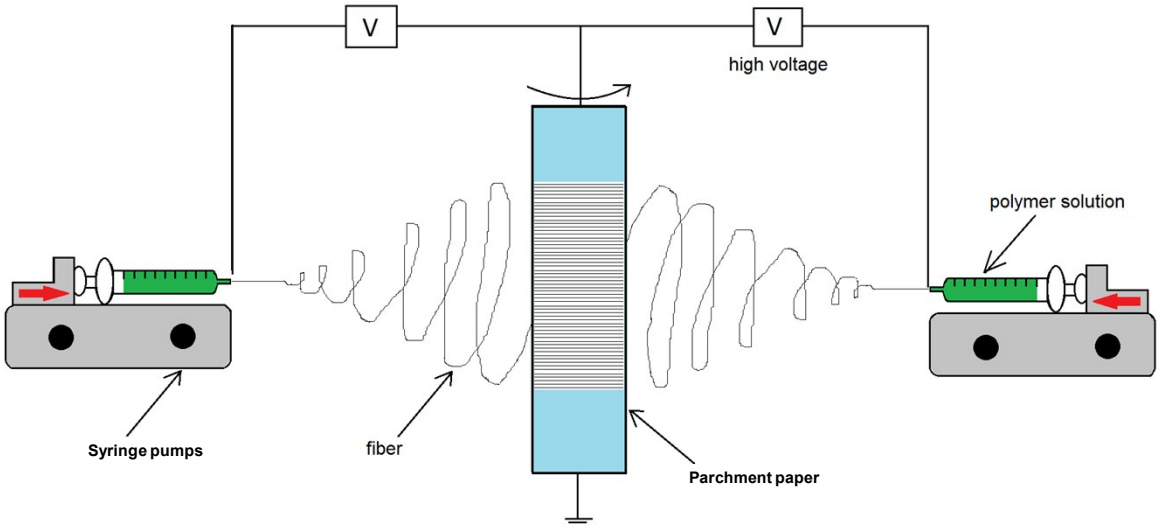

Fig. S1. Schematic illustration of the electrospinning setup for preparing large scale fibers.

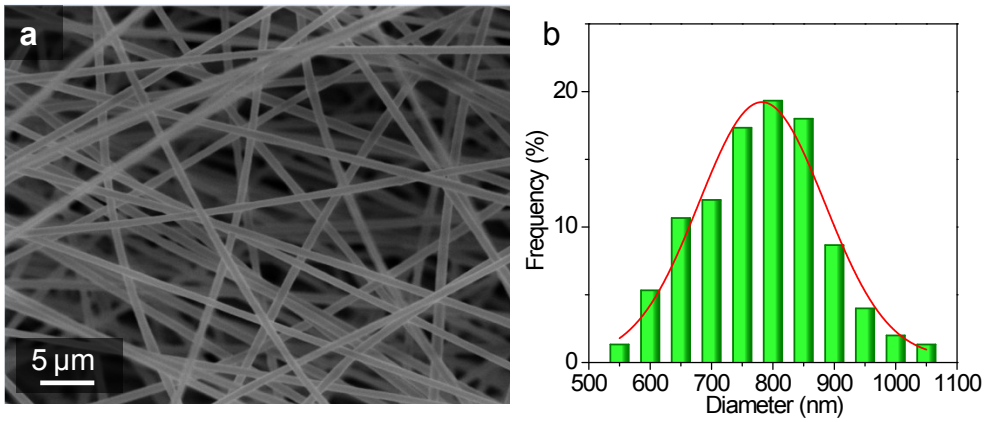

Fig. S2. SEM image of as-spun organic fibers and the corresponded diameter distribution.

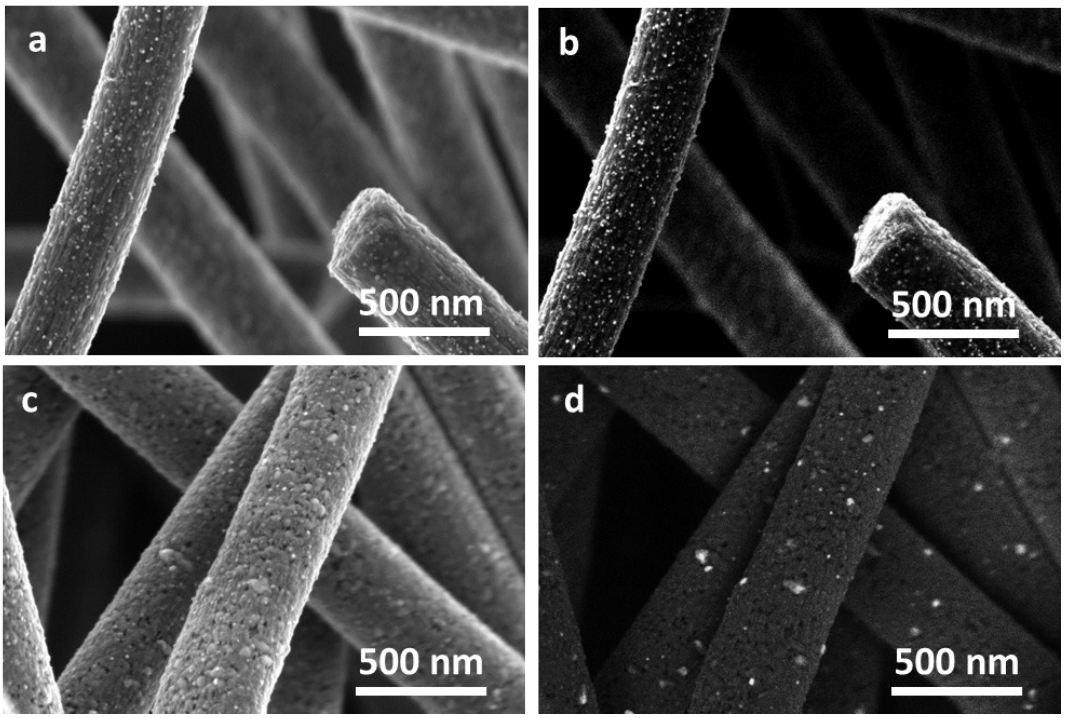

Fig. S3. HR-SEM micrographs of an electrospun fiber containing nickel nanoparticles after carbonization step under argon at (a, b) 600 and (c, d) 700 °C, respectively, for 3 h before CVD process. a) and c) are secondary electron SEM pictures whereas b) and d) are back scattered electron SEM pictures highlighting the nickel nanoparticles as white spots available at the carbon fiber surface.

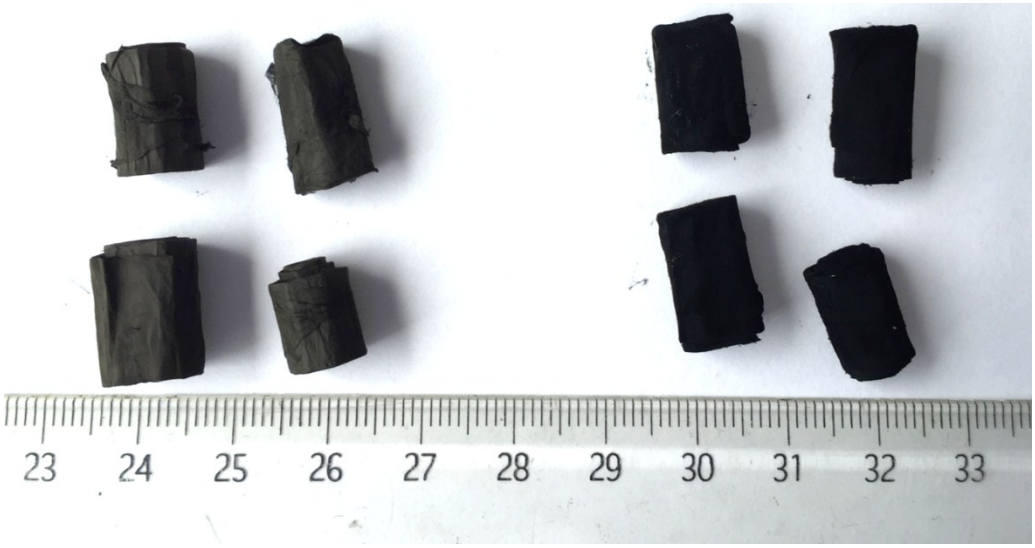

Fig. S4. Digital photos of macroscopic cylindrical shapes of Ni/CNF (left) and hierarchical CF/CNF after CVD process (right).

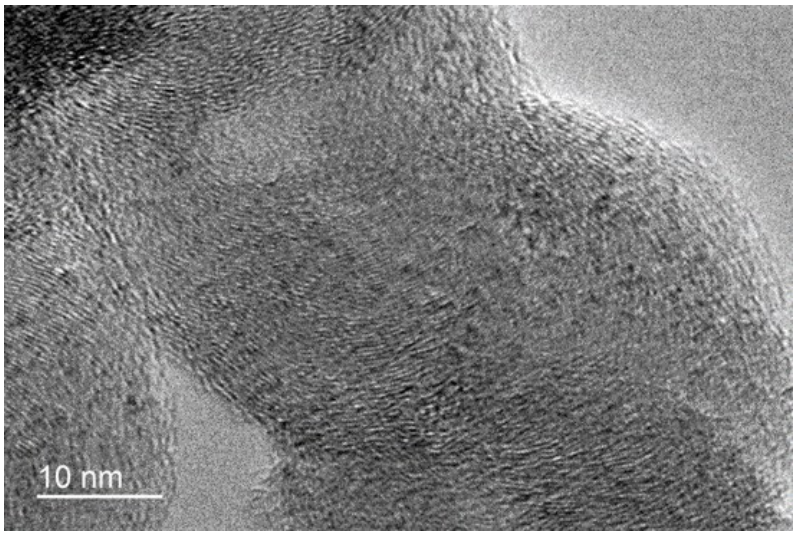

Fig. S5. HR-TEM micrographs of typical carbon nanofibers grown by CVD process from Ni/CF sample showing the presence of prismatic planes along the fiber axis.

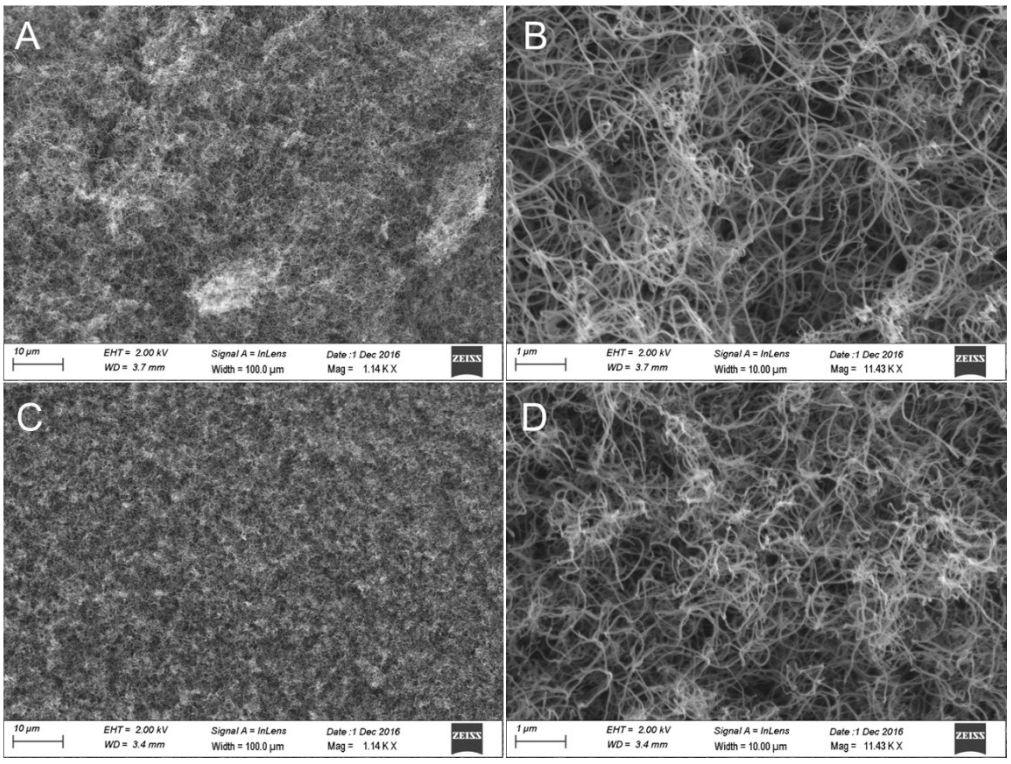

Fig. S6. SEM micrographs of a CF/CNF/800-800/120-120 monolith (A, B) before and (C, D) after ultrasonic treatment showing the high adhesion strength of the carbon nanofibers to the carbon fibers.

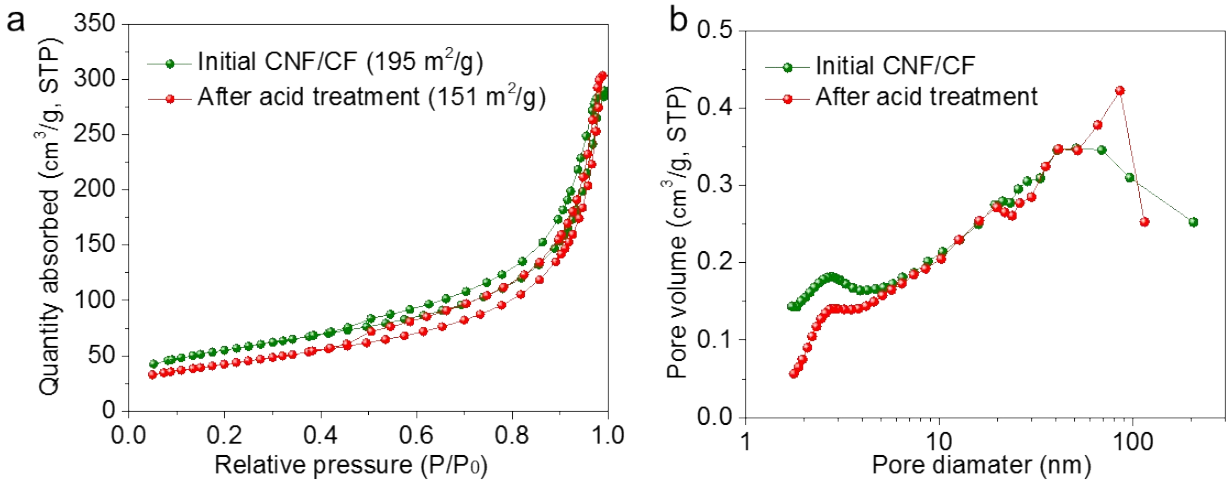

Fig. S7. N_2 adsorption -desorption isotherms and pore size distribution calculated by BJH method of the CNF/CF composite (CNF/CF700-700/2-2) before and after acid treatment.

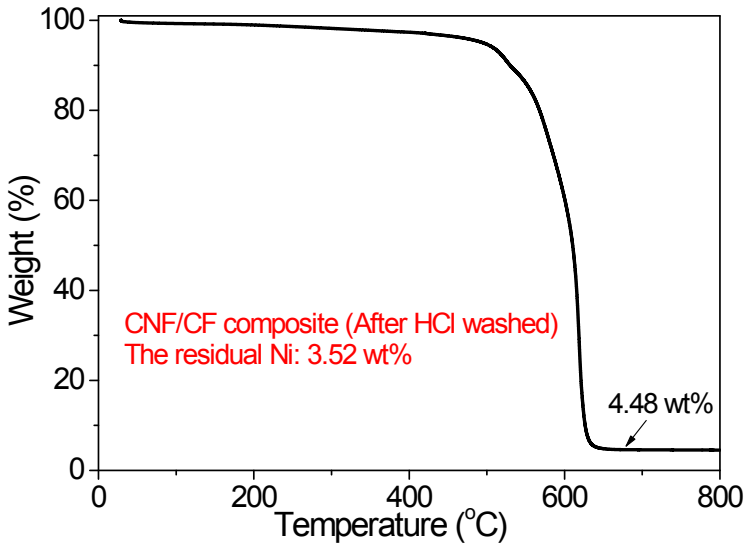

Figure S8. TGA result performed under air of the CF/CNF monolith after HCl treatment presenting 3.53 wt % of Ni residue covered by graphical carbon wall which could not be removed by concentrated HCl solution.