Supporting information

Composite cathodes based on lithium-iron phosphate and N-doped carbon materials

Irina Stenina [1]*, Danis Safikanov [1], Polina Minakova [1], Svetlana Novikova [1], Tatiana Kulova [2], Andrey Yaroslavtsev [1]

[1] Kurnakov Institute of General and Inorganic Chemistry, Russian Academy of Sciences, Leninsky prospekt 31, Moscow 119991, Russia
[2] Frumkin Institute of Physical Chemistry and Electrochemistry, Russian Academy of Sciences, Leninsky prospekt 31-4, Moscow 119071, Russia
* Correspondence: stenina@igic.ras.ru, Tel.: +7(495)7756585

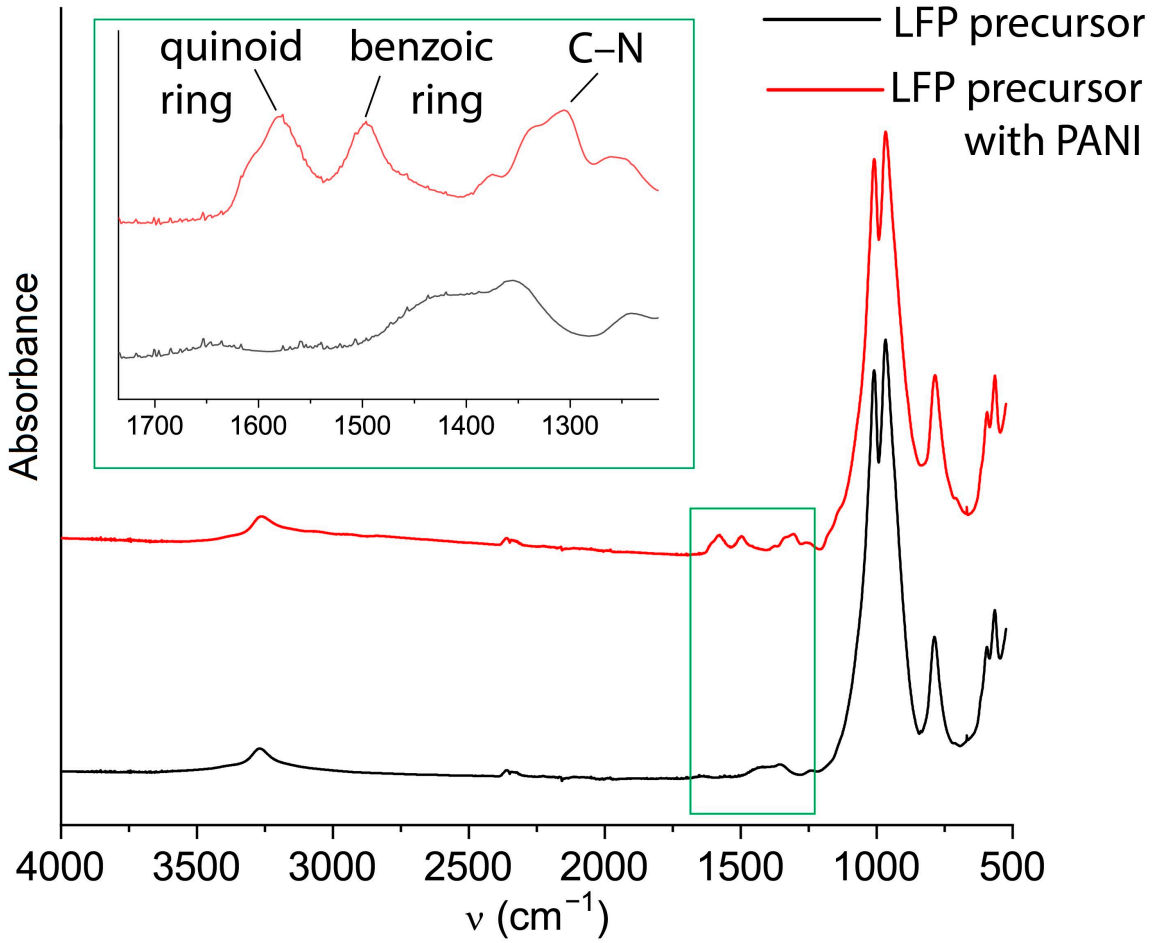


Figure S1. FTIR spectra of the pristine LFP precursor and the LFP precursor/PANI composite.

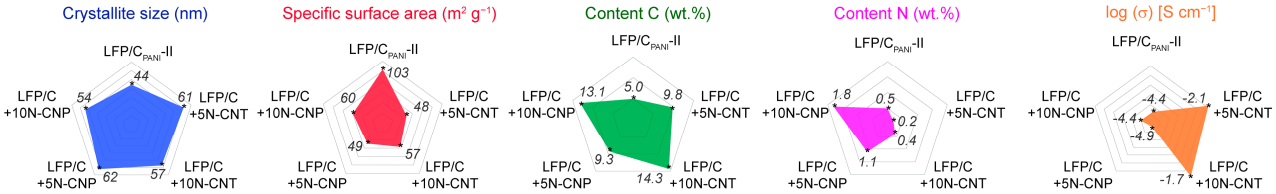
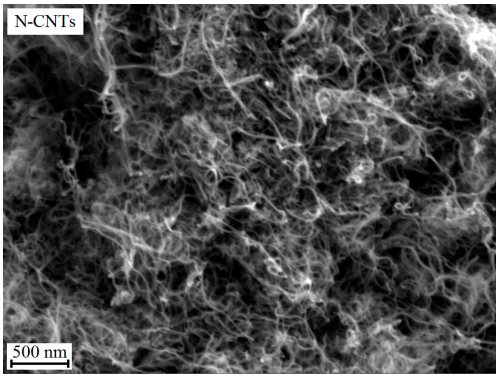
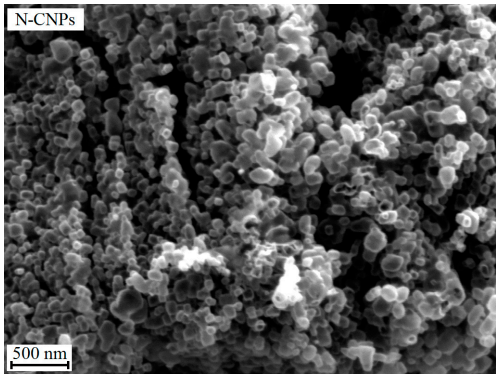


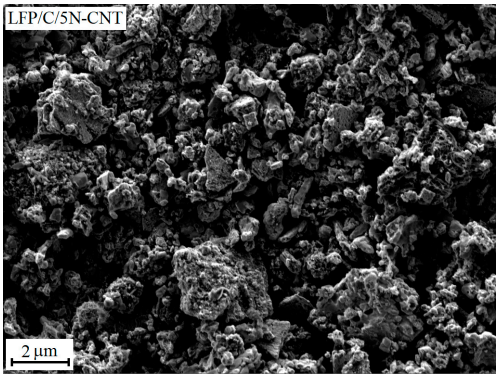
Figure S2. The radar charts with the comparison of the crystallite size, contents of carbon and nitrogen, electronic conductivity, and specific surface areas of the prepared composites.


N-CNTs
500 nm

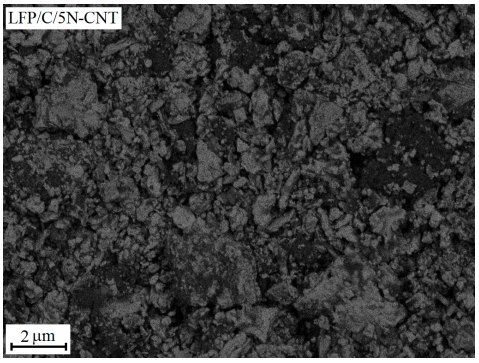
(**a**)


N-CNPs
500 nm

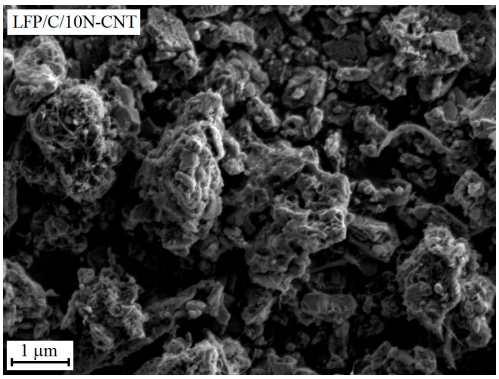
(**b**)


LFP/C/5N-CNT
2 μm

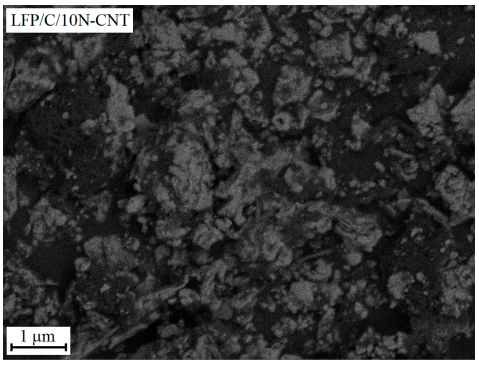
(**c**)


LFP/C/5N-CNT
2 μm

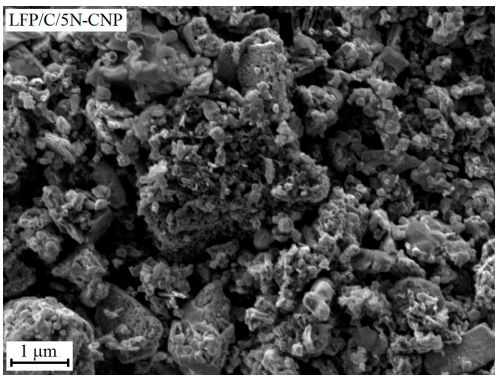
(**d**)


LFP/C/10N-CNT
1 μm

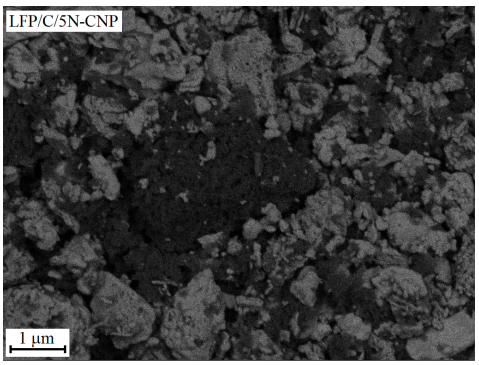
(**e**)


LFP/C/10N-CNT
1 μm

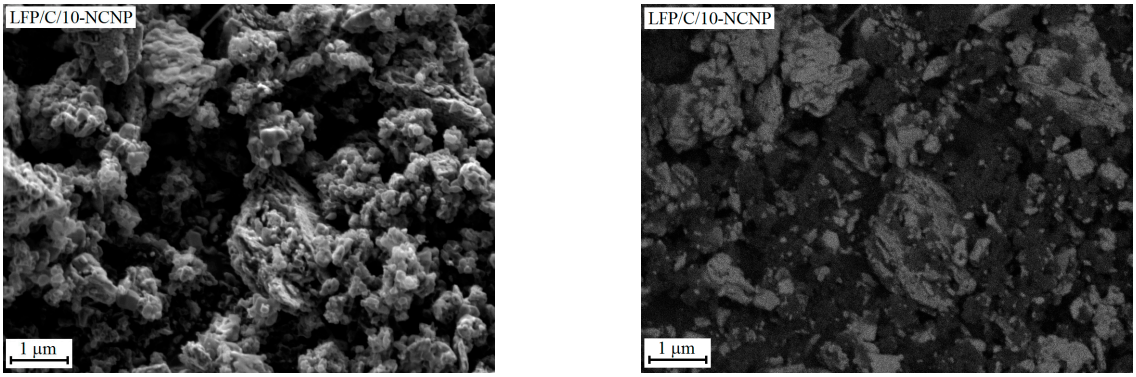
(**f**)


LFP/C/5N-CNP
1 μm

(**g**)

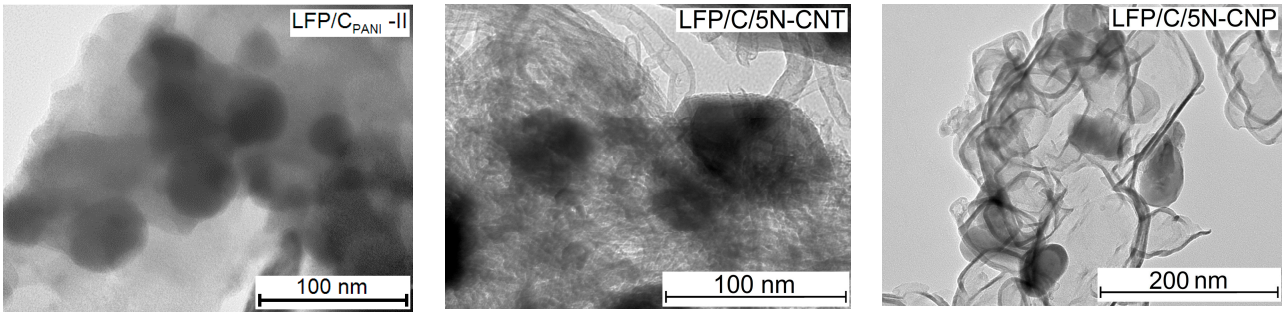

LFP/C/5N-CNP
1 μm

(**h**)



(i) **(j)**

Figure S3. SEM images of N-CNTs (a), N-CNPs (b), the LFP/C/5N-CNT (c, d), the LFP/C/10N-CNT (e, f), LFP/C/5N-CNP (g, h), and LFP/C/10N-CNP (i, j): in secondary (a-c, e, g, i) and backscattered (d, f, h, j) electrons.



(**a**) (**b**) (**c**)

Figure S4. TEM images of the LFP/C$_{PANI}$-II (a), LFP/C/5N-CNT (b), LFP/C/5N-CNP (c).