Supporting Information

Controlled growth of nanostructured biotemplates with cobalt and nitrogen co-doping as a binderless, lithium-ion battery anode

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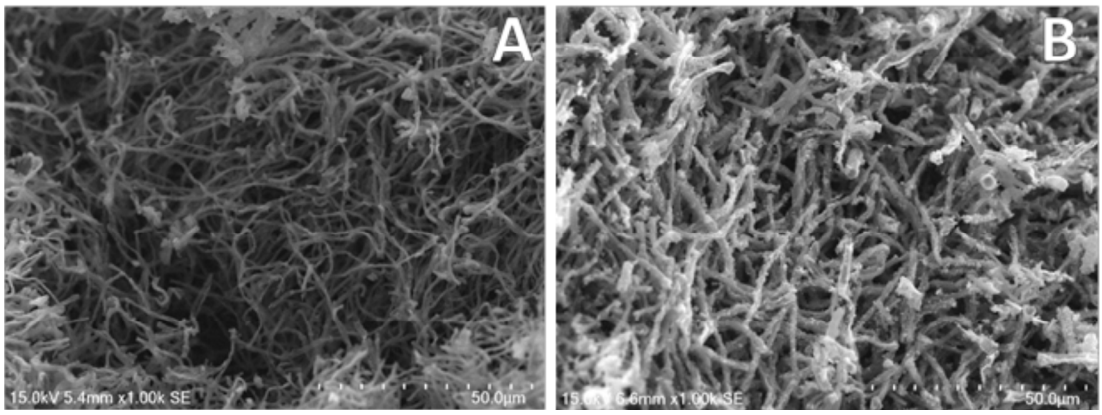

Figure S1 SEM images of fungal mats and mycelia structure from (A) NO-40, (B) FCCE-S.

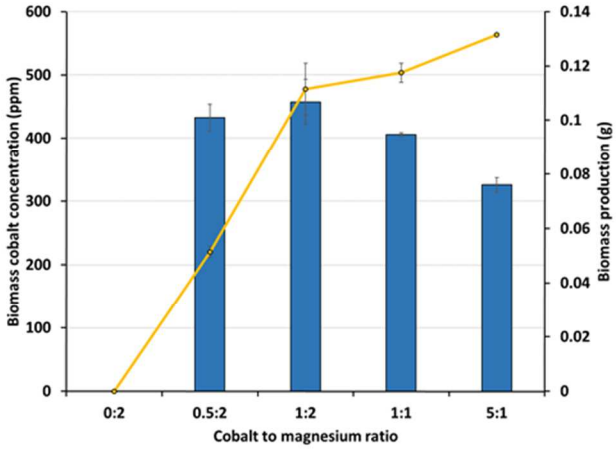

Figure S2 Cobalt concentration (bar) and biomass production (line) of 48 h *N. crassa* cultures grown in different molar concentrations of Co and Mg.

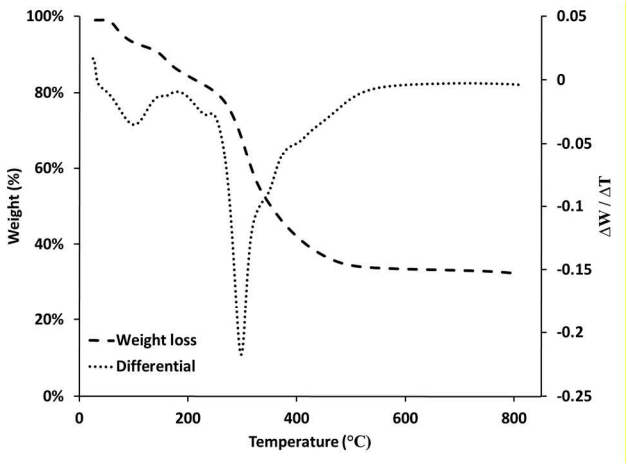

Figure S3 Weight loss and differential data from the pyrolysis of fungal mats of *N. crassa* grown at 20°C min^{-1}.

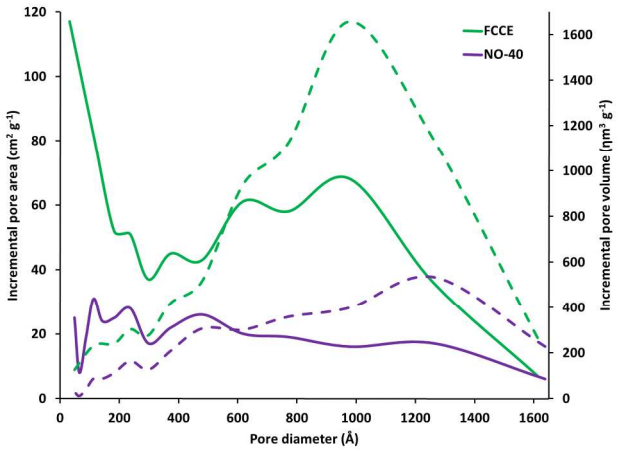

Figure S4 Incremental pore volume (dashed) and incremental pore area (solid) for FCCE and NO-40 electrode materials.

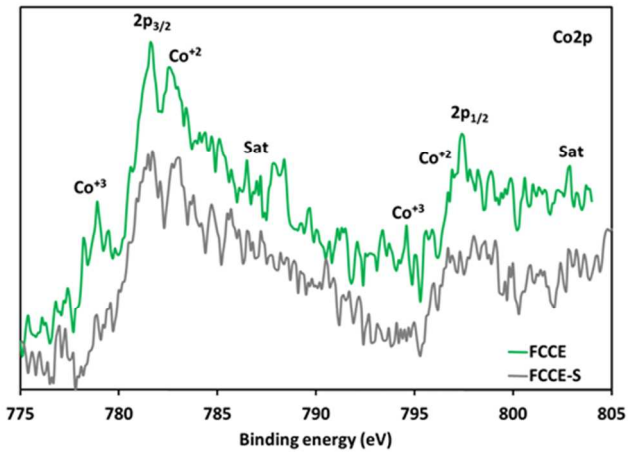

Figure S5 XPS spectra for Co2p transition from graphitic electrodes generated from fungal mats cultured with 10 mM $Co(NO_3)_2$ (FCCE) and autoclaved fungal mats soaked with $Co(NO_3)_2$ (FCCE-S).

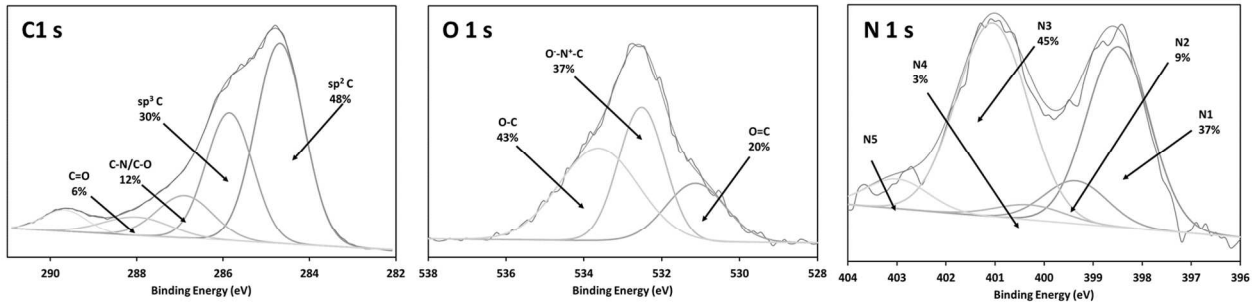

Figure S6 XPS spectra for FCCE-S. N 1S labels are N1: pyridinic; N2: amine or imine; N3: pyrrolic; N4: quaternary; N5: pyridinic-N-oxide.

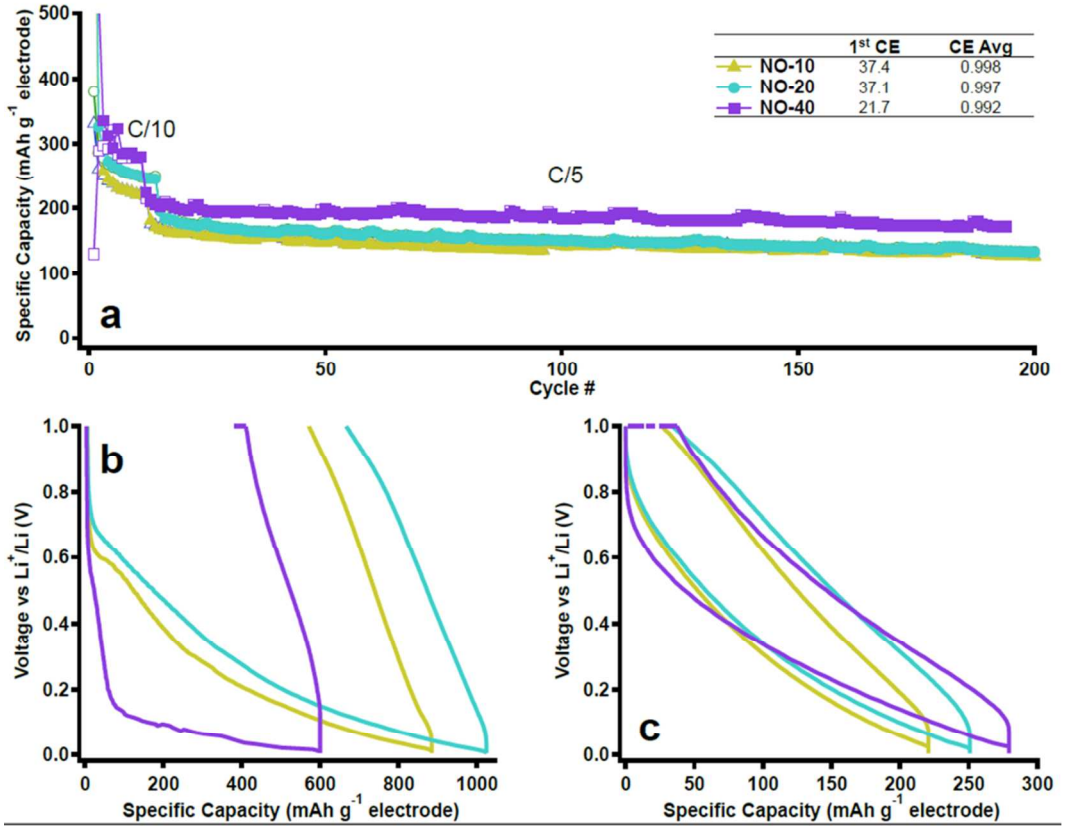

Figure S7 (a) Cycling behavior of three samples without lyophilization. Voltage ranges is 0.005 – 1V. 1st cycle CE and long cycling average CE is displayed in table. (b) 1st cycle voltage profile of three samples. (c) 10th cycle voltage profile of three samples.