Supporting Information

Mask-free Preparation of Patterned Carbonized Carboxymethyl Cellulose on Fabrics for Flexible Electronics

Yue Miao^{*a*, *t*}, Lijia Wan^{*b*, *t*}, Xiaofeng Ling^{*c*,*}, *Bo* Chen^d, Likun Pan^{*b*}, Yang Gao^{*a*,*}

^aSchool of Mechanical and Power Engineering, East China University of Science and Technology, Shanghai 200237, China

^bSchool of Physics and Materials Science, East China Normal University, Shanghai 200062, China

^cSchool of Information Science and Engineering, East China University of Science and Technology, Shanghai 200237, China

^dDevelopment of planning department, Shanghai Aircraft Manufacturing Co., Ltd.

E-mail: <u>xfling@ecust.edu.cn; yanggao@ecust.edu.cn</u>



Figure S1. (a) Direct LDW carbonized fabrics. (b) LDW carbonized fabrics coated with CMC



Figure S2. (a-c) The procedure to remove the unprocessed CMC. (d-f) The adhesion

test for the electrode.



Figure S3. High magnification SEM images of the $Mo_xO_y/CCMC$ composites at

different laser powers of (a) 0.25, (b) 0.30, and (c) 0.35 W.



Figure S4. (a) A TEM image of a CCMC. (b-d) EDX mapping of the CCMC. (e) EDX

spectrum of the CCMC.



Figure S5. (a) A TEM image of a $Mo_xO_y/CCMC$ prepared at 0.25 W. (b-e) EDX mapping of the $Mo_xO_y/CCMC$. (f) EDX spectrum of the $Mo_xO_y/CCMC$.



Figure S6. (a) XRD spectrum of CCMC prepared at a laser power of 0.25 W. (b) Raman spectra of CMC and CCMC synthesized at 0.25 W.



Figure S7. (a) N_2 adsorption-desorption isotherms, (b) pore size distribution, and (c) BET specific surface areas of $Mo_xO_y/CCMC$ fabricated at 0.25, 0.30 and 0.35 W.



Figure S8. Sheet resistance of the CCMC synthesized at 0.25, 0.30, and 0.35 W.



Figure S9. (a) CV curves of the $Mo_xO_y/CCMC$ electrodes prepared at CMC to AM

ratios of 10:1, 5:1 and 2:1. (b) Specific capacitance of the $Mo_xO_y/CCMC$ electrodes.

Sample	R/Ω	R_{ct}/Ω	СРЕ	W ₀
Mo _x O _y /CCMC-0.30 W	4.74	2.60	0.42	0.037
Mo _x O _y /CCMC-0.30 W	5.16	3.03	0.55	0.038
Mo _x O _y /CCMC-0.35 W	5.37	2.98	0.45	0.357

Table S1. Fitted electrical equivalent circuit values from EIS of samples.