Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A

Supporting information

for

Mesoporous Carbon Decorated Graphene as Efficient Electrode Materials for Supercapacitor

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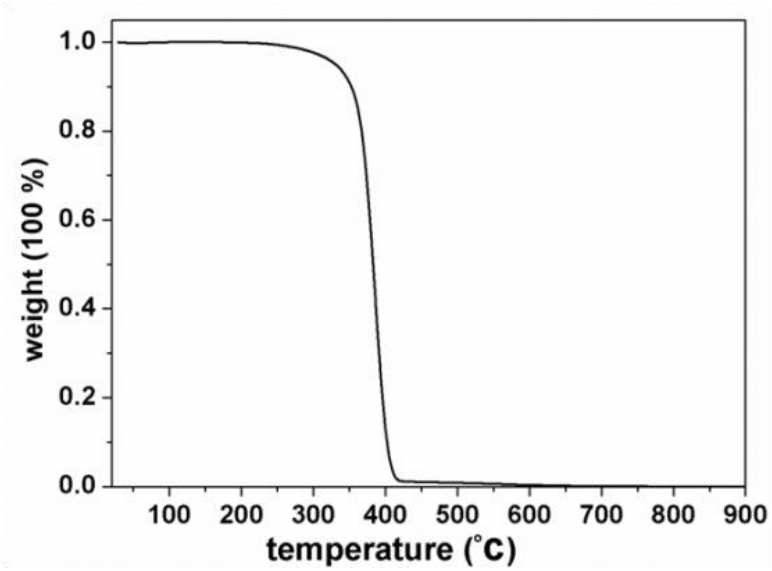

Figure S1: TGA pattern of pure F127

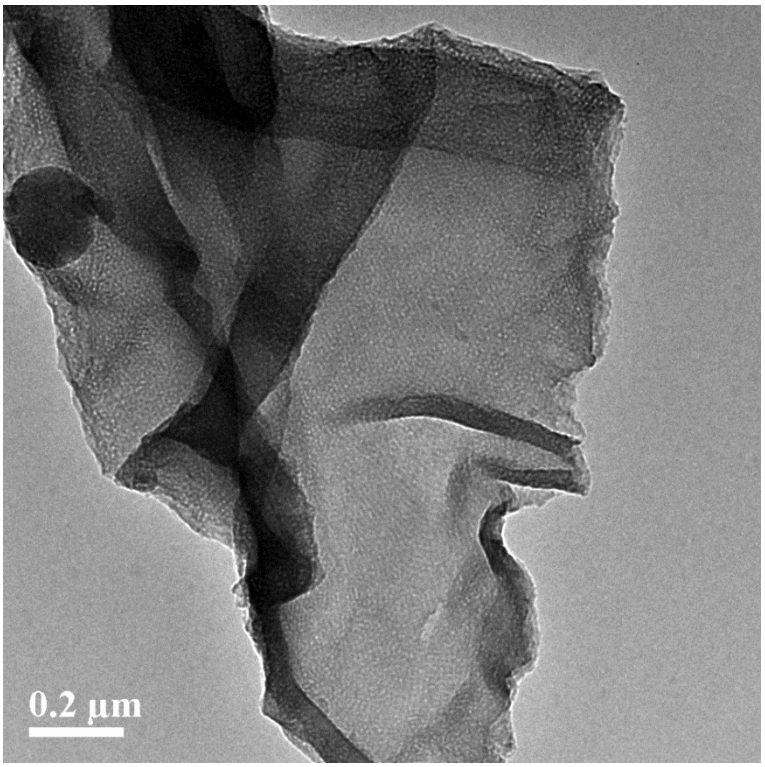

Figure S2: TEM image of MCG-5

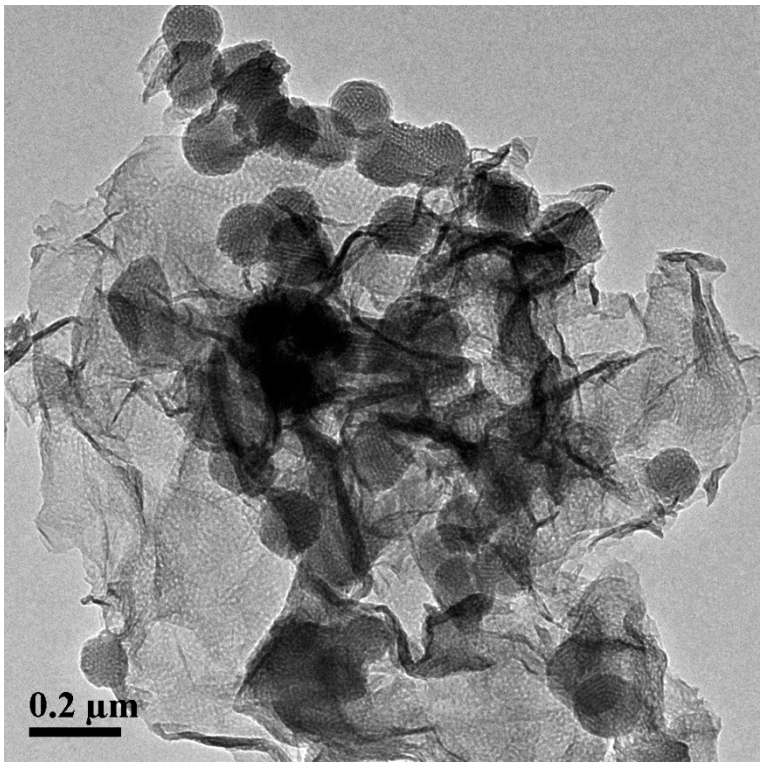

Figure S3: TEM image of MCG-20

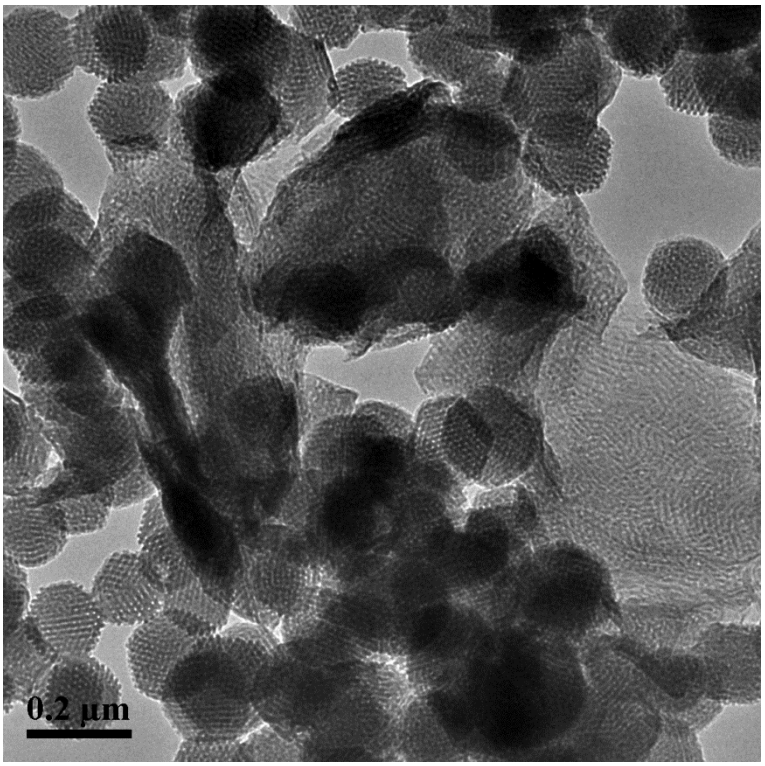

Figure S4: TEM image of MCG-40

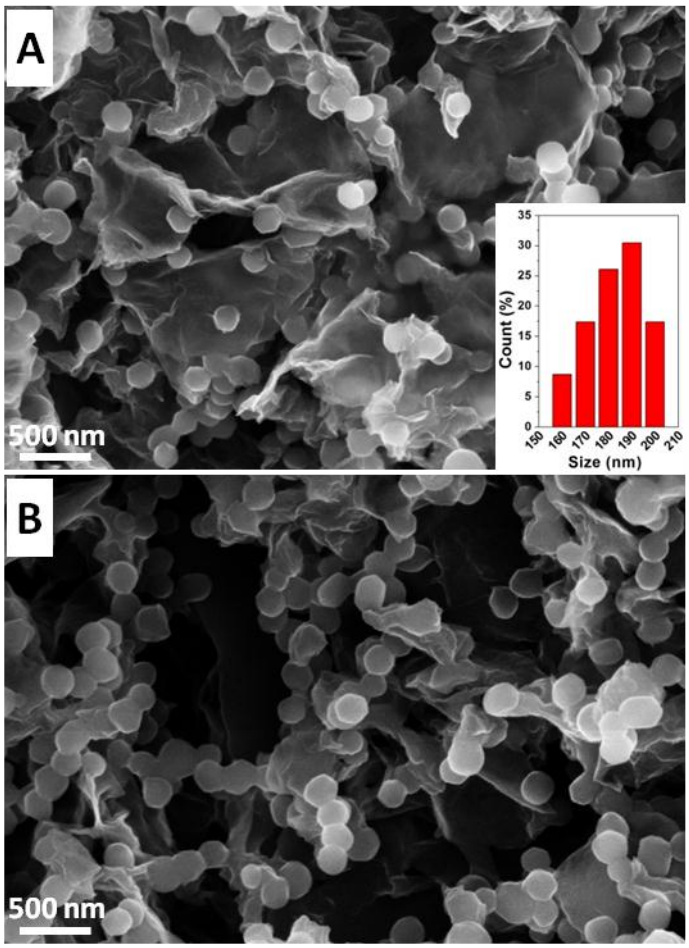

Figure S5: SEM images of A) MCG-20; B) MCG-40. The insert is size distribution of MCN in corresponding sample. The data was obtained by analyzing 100-200 spheres per sample from low magnification TEM images.

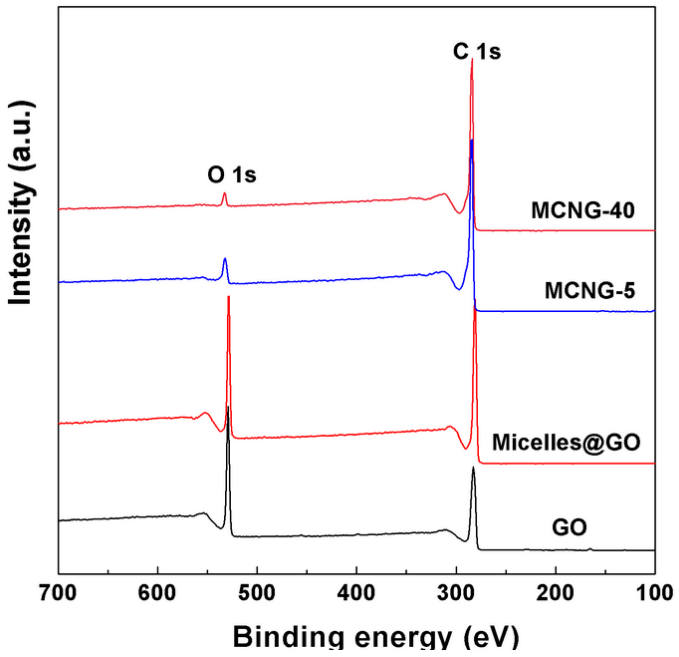

Figure S6: Survey XPS spectra of GO, micelles@GO, MCG-5 and MCG-40

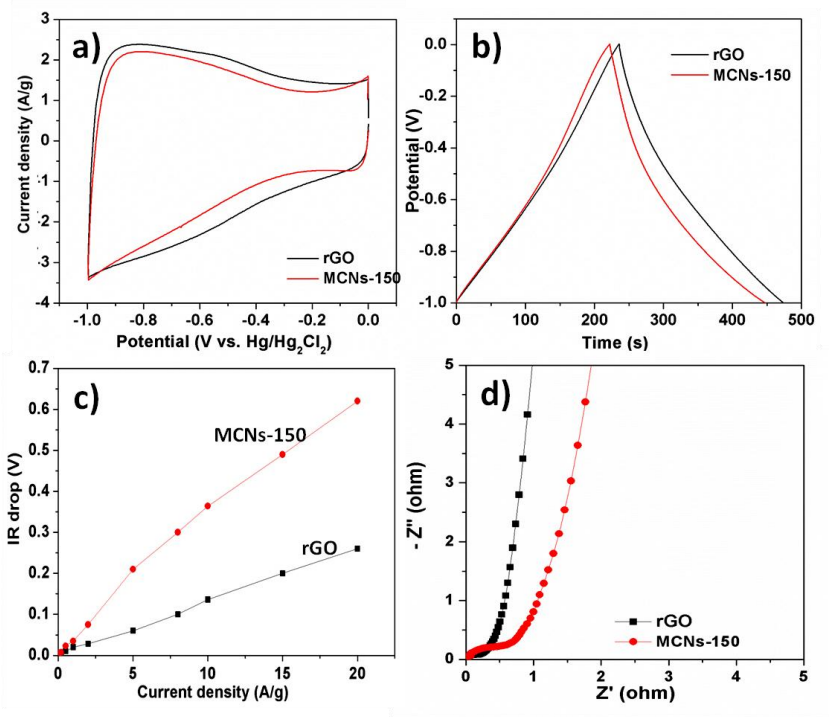

Figure S7: Electrochemical behavior of rGO and MCNs-150 (a) CV curves measured at the scan rate of 25 mV/s; (b) Galvanostatic charge-discharge curves at the current density of 0.5 A/g; (c) Variation of IR drop with discharge current density; (d) EIS under the influence of an ac voltage of 10 mV.

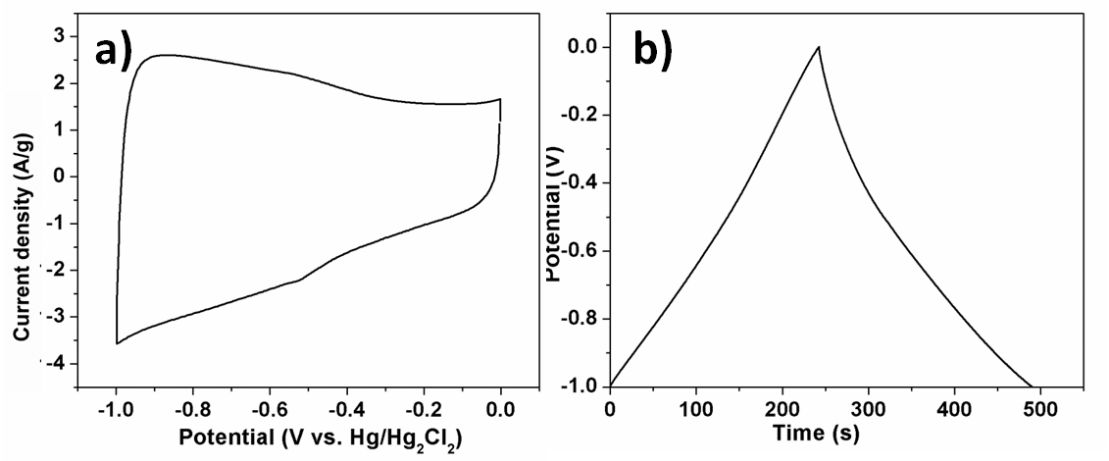

Figure S8: Electrochemical behavior of simple mixture of graphene and MCNs-150 (typical weight ratio of 1:1) (a) CV curves measured at the scan rate of 25 mV/s; (b) Galvanostatic charge-discharge curves at the current density of 0.5 A/g

Table S1. Typical EDLC capacitance of carbonaceous materials based on the aqueous electrolyte.

Materials	Electrode system	Current density	Specific capacitance	Ref.
MCG	Three	0.5A/g	213~113 F/g	Present work
Mesoporous carbon	Three	0.5A/g	132~113 F/g	[s1]
MCN	Three	0.5A/g	142~98 F/g	[16]
MCS	Two	0.25A/g	225 F/g	[s2]
3D Macroporous Graphene	Three	1A/g	202 F/g	[s3]
GNS	Three	0.1A/g	150 F/g	[s4]
Activated Graphene	Two	50mV/s	14 μ F/cm^{-2}	[9]
B and N co-doped Graphene	Two Three	5 mV/s 1 mV/s	62 F/g 239 F/g	[s5]
N doped CNF	Three	1A/g	202 F/g	[s6]
GMCS	Two	0.1A/g	39.4 F/g	[21]
Graphene Foam	Two	0.5A/g	110	[s7]
Graphene/CNT	Three	1 mV/s 0.6A/g	175 F/g 230 F/g	[s8]

References

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