

Supplementary information

Morphology-Engineered α -MoO₃ Nanostructures via MoS₂ Transformation for High-Performance Supercapacitors

Ahmed A.R. Abdel-Aty^a, Mohammed Mosaad Awad^a, Olfa Kanoun^b, Ahmed S.G. Khalil^{c,d*}

^a Institute of Basic and Applied Science, Egypt-Japan University of Science and Technology (E-JUST), 179 New Borg El-Arab City, Alexandria, Egypt

^b Professorship of Measurement and Sensor Technology, Chemnitz University of Technology, Reichenhainer Str. 70, 09126 Chemnitz, Germany

^c Environmental and Smart Technology Group, Faculty of Science, Fayoum University, 63514, Fayoum, Egypt.

^d EvoSmarTec GmbH, Alfredstr. 81, 45130 Essen, Germany

* Corresponding author: Prof. Ahmed S.G. Khalil, E-mail: asg05@fayoum.edu.eg

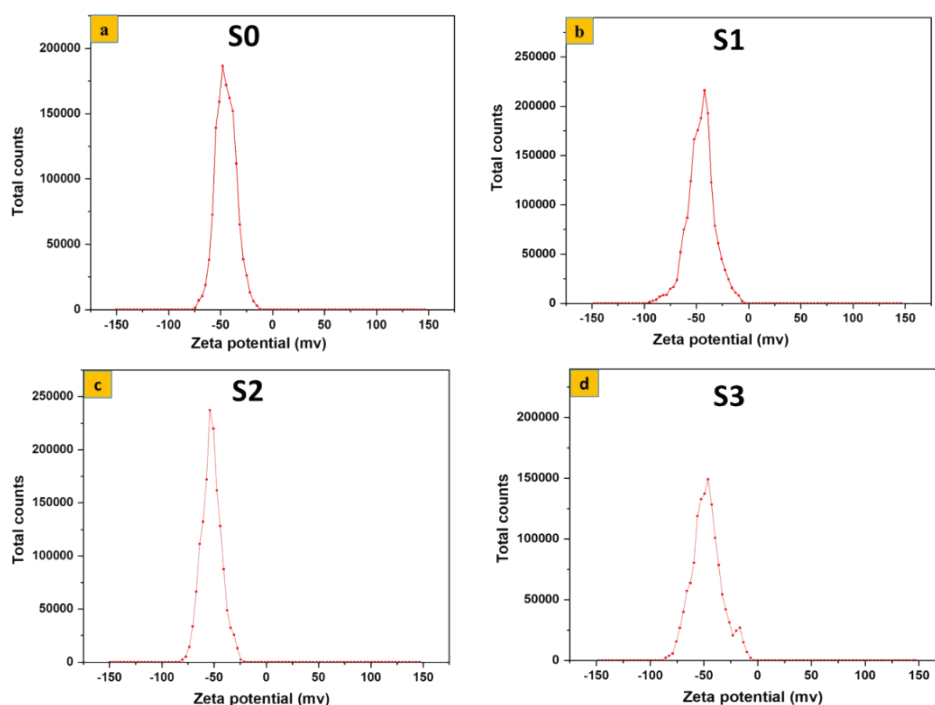


Fig. S1. Zeta potential profile of synthesized S0, S1, S2, and S3.

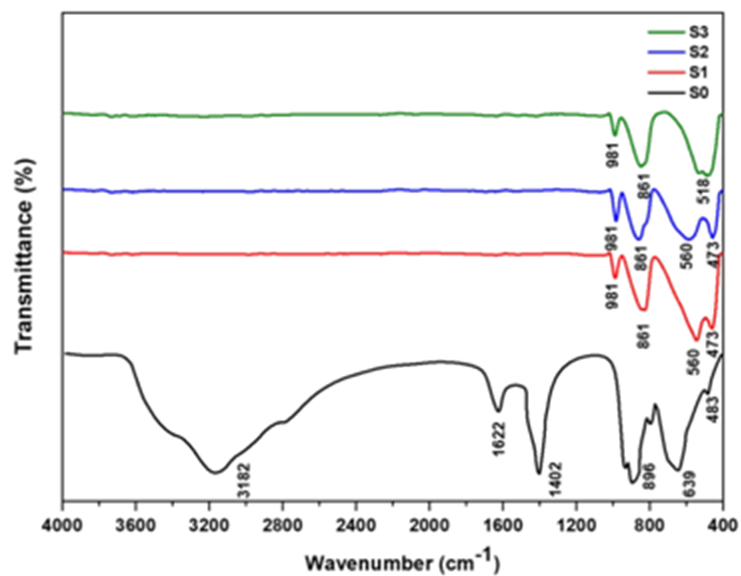


Fig.S2. ATR-IR spectra of synthesized S0, S1, S2, and S3.

Table S1: Surface area, pore diameter and pore volume of the adsorbents.

Sample	S_{BET} (m^2g^{-1})	Pore Volume ($\text{cm}^3 \text{g}^{-1}$)	Pore diameter (nm)
S0	10.44	0.035	19.75
S1	14.39	0.0967	27.55
S2	3.23	0.036	9.36
S3	12.34	0.071	22.59

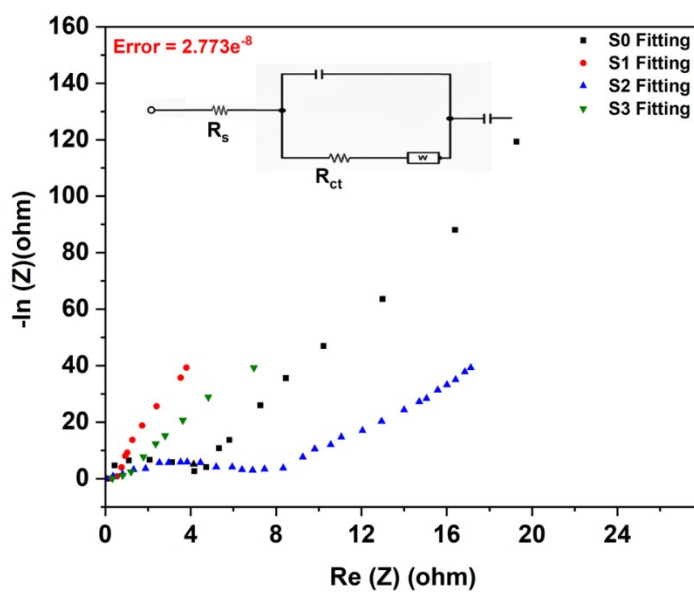


Fig.S3. EIS fitting for S0-S3

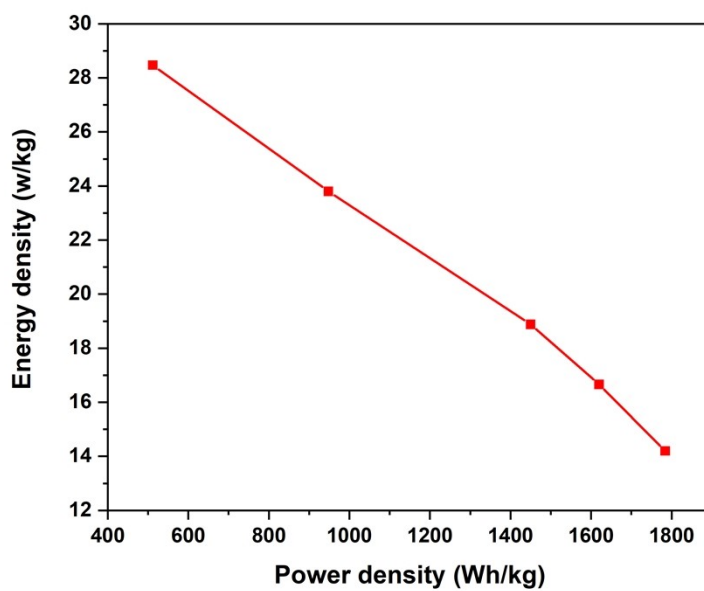


Fig.S4. IR Ragone plot for MoO₃-S1 at different current density

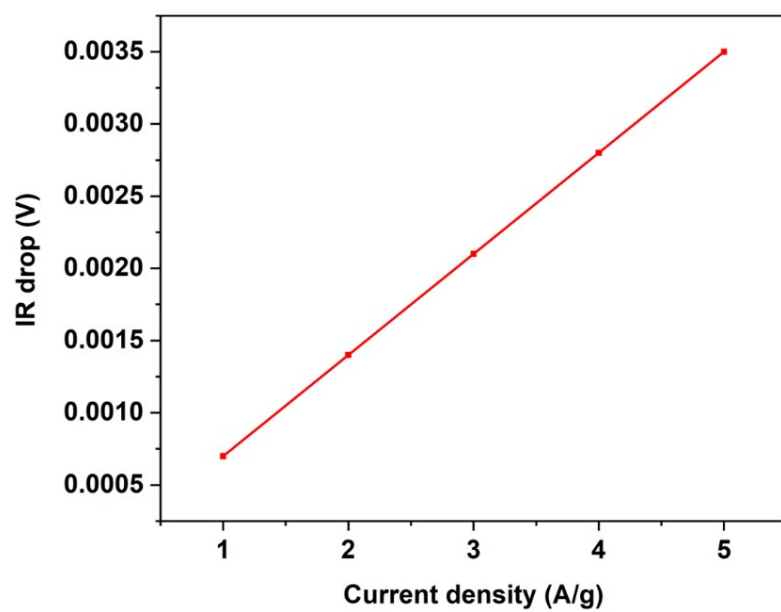


Fig.S5. IR drop for MoO₃-S1 at different current density

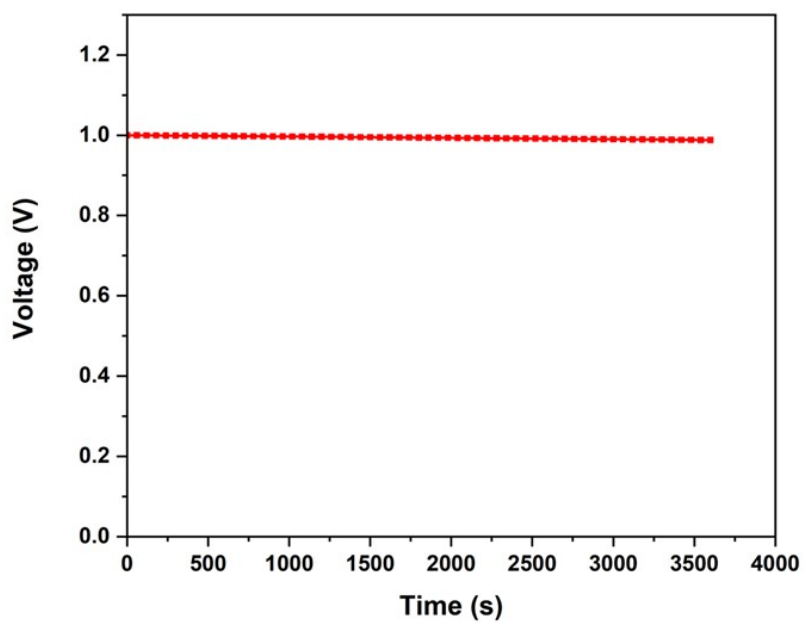


Fig.S6. Self discharging for MoO₃-S1 for 1 h.