

Supporting Information

Biodegradable MoN_x@Mo-foil electrodes for human-friendly supercapacitors

Hongjia Ren^{1a}, Hongru Zhao^{1a}, Muhammad Sufyan Javed^{a,*}, Sajid Hussain Siyal^b, Xinze Zhang^a,
Xiaofeng Zhang^a, Awais Ahmad^{c,d}, Iftikhar Hussain^e, Mohamed A. Habila^f, Weihua Han^{a,*}

^a*School of Physical Science and Technology, Lanzhou University, Lanzhou 730000, China*

^b*Department of Metallurgy and Materials Engineering, Dawood University of Engineering and
Technology Karachi 74800, Sindh Pakistan*

^c*Departamento de Quimica Organica, Universidad de Cordoba, EdificioMarie Curie (C-3), Ctra
Nnal IV-A, Km 396, E14014 Cordoba, Spain*

^d*Department of Chemistry, The University of Lahore, Lahore, 54590, Pakistan*

^e*Department of Mechanical Engineering, City University of Hong Kong, 83 Tat Chee Avenue, Hong
Kong*

^f*Department of Chemistry, College of Science, King Saud University, P. O. Box 2455, Riyadh 11451,
Saudi Arabia*

*E-mail addresses: safisabri@gmail.com (Dr. Javed), hanwh@lzu.edu.cn (Prof. Han)

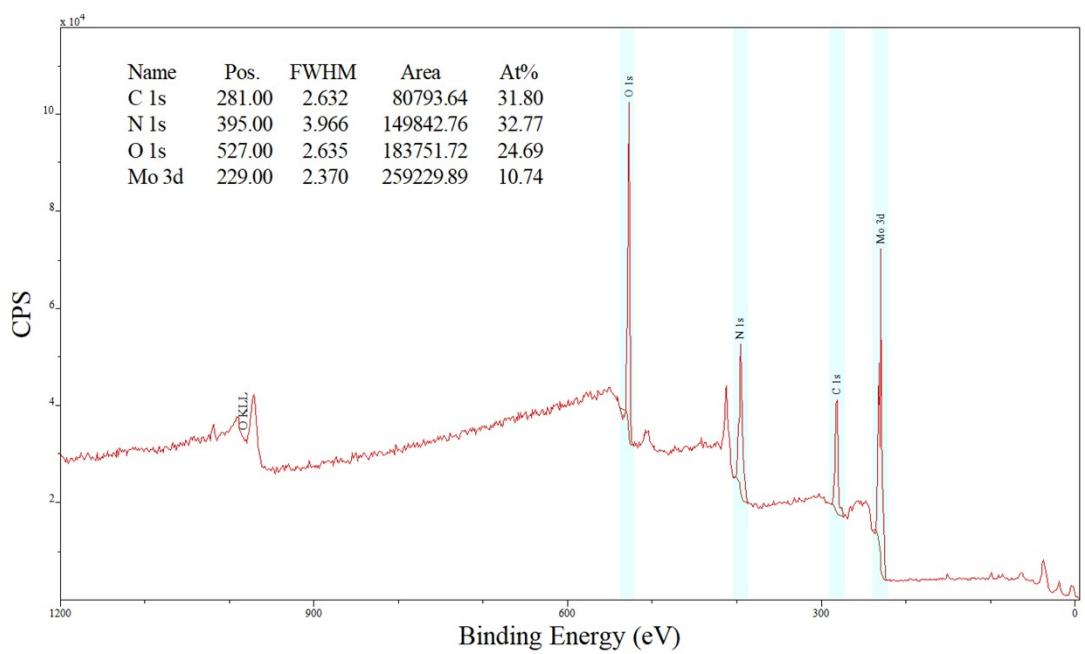


Fig. S1: XPS elemental content analysis of MoN_x @Mo-foil

Surface Area

Single point surface area at P/Po = 0.300393767: 1.6840 m²/g

BET Surface Area: 2.3087 m²/g

Langmuir Surface Area: 5.9090 m²/g

t-Plot External Surface Area: 3.9802 m²/g

BJH Adsorption cumulative surface area of pores
between 17.000 Å and 3000.000 Å diameter: 0.875 m²/g

BJH Desorption cumulative surface area of pores
between 17.000 Å and 3000.000 Å diameter: 1.7456 m²/g

Pore Volume

Single point adsorption total pore volume of pores
less than 7823.425 Å diameter at P/Po = 0.997538599: 0.001789 cm³/g

t-Plot micropore volume: -0.001050 cm³/g

BJH Adsorption cumulative volume of pores
between 17.000 Å and 3000.000 Å diameter: 0.001161 cm³/g

BJH Desorption cumulative volume of pores
between 17.000 Å and 3000.000 Å diameter: 0.001676 cm³/g

Pore Size

Adsorption average pore width (4V/A by BET): 31.0021 Å

BJH Adsorption average pore diameter (4V/A): 53.076 Å

BJH Desorption average pore diameter (4V/A): 38.397 Å

Horvath-Kawazoe

Maximum pore volume at P/Po = 0.013455822: 0.000116 cm³/g

Median pore width: 16.552 Å

Fig. S2: Molybdenum foil specific surface area and pore size test report

Summary Report

Surface Area

Single point surface area at P/Po = 0.323509743: 2.4079 m²/g

BET Surface Area: 2.3869 m²/g

Langmuir Surface Area: 4.4338 m²/g

t-Plot Micropore Area: 7.5818 m²/g

t-Plot External Surface Area: -5.1949 m²/g

Pore Volume

Single point adsorption total pore volume of pores less than 0.000 Å diameter at P/Po = 0.999821745: 0.197411 cm³/g

t-Plot micropore volume: 0.004114 cm³/g

Pore Size

Adsorption average pore width (4V/A by BET): 3308.2566 Å

Horvath-Kawazoe

Maximum pore volume at P/Po = 0.010567618: 0.000820 cm³/g

Median pore width: 11.558 Å

Fig. S3: MoN_x@Mo-foil specific surface area and pore size test report