

SYNTHESIS AND CHARACTERIZATION OF  
MX<sub>2</sub> AND EXFOLATION MX<sub>2</sub>  
(M=Mo ,W; X = O, S, Se AND Te) AND THEIR  
ELECTROCHEMICAL PROPERTIES

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Thesis submitted in fulfillment of the requirements  
for the award of the degree of  
Bachelor of Applied Science (Honor) Material Technology

Faculty of Industrial Sciences & Technology  
UNIVERSITI MALAYSIA PAHANG

DECEMBER 2016

## **SUPERVISORS' DECLARATION**

I hereby declare that I have checked the thesis and in my opinion, this thesis is adequate in terms of scope and quality for the award of the degree of Bachelor of Applied Science (Honor) Material Technology.

Signature

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## STUDENT'S DECLARATION

I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged. The thesis has not been accepted for any degree and is not concurrently submitted for award of other degree.

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## ACKNOWLEDGEMENTS

First, I wish to thank Dr.Saifful Kamaluddin bin Muzakir, my supervisor, for giving me the for chance to do this project. He is giving me the suggestion, time, materials and necessary equipment to complete the work. I truly appreciate the guidance and opinion you gave for this research.

In addition, I wish to thanks to my co-supervisor, Dr Radhiyah binti Abdul Aziz, that guiding me for all the way of synthesis material until the electrochemical analysis. She help me to solve the problem while I faced the problem.I truly appreciate her guidance for this experiment. I wish to thank Dr.Izan Izwan bin Minson, for guiding us for the result part of the experiment.

Next I would also like to thanks to several friends who have helped me along the way. This includes Yeo Wan Ping, Haikal Rusland, Har Lai Yee, Yit Pei Shian, Leong Pei Mun, and Stephanie Keong Wei San. They always help me and advise on laboratory work and mentally support to me.

I also thanks to our lab assistant who have helped me along the research. It includes Encik Abd Latip Hj Dris, Encik Khairul Affendi Yusof and Muhammad Halim Paboh. They borrow me the apparatus and equipment for my research. They also help me to solve the question while I faced the problem on experiment.

Last, I extend special thanks to Faculty Industrial Sciences & Technology in University Malaysia Pahang for sponsor me RM 1000 for experiment. The faculty allocates each student RM 1000 to purchase the materials needed in the experiment.

## TABLE OF CONTENTS

	<b>Page</b>
<b>DECLARATION OF THESIS AND COPYRIGHT</b>	
<b>SUPERVISORS' DECLARATION</b>	vii
<b>STUDENT'S DECLARATION</b>	iii
<b>ACKNOWLEDGEMENTS</b>	iv
<b>ABSTRACT</b>	v
<b>ABSTRAK</b>	vi
<b>TABLE OF CONTENTS</b>	vii
<b>LIST OF TABLES</b>	vii
<b>LIST OF FIGURES</b>	xi
<b>LIST OF SYMBOLS</b>	xv
<b>LIST OF ABBREVIATIONS</b>	xvi
<b>CHAPTER 1 INTRODUCTION</b>	
1.1 Research Background	1
1.2 Problem Statement	3
1.3 Objective of Research	3
1.4 Research Question	3
1.5 Scope of Study	4
1.6 Overview of the Study	5
<b>CHAPTER 2 LITERATURE REVIEW</b>	
2.1 Introduction	6
2.2 Background of Energy Storage Devices	6
2.3 Classification of Supercapacitors	9
2.3.1 Electrochemical Double-Layer Capacitors (EDLCs)	10
2.3.2 Pseudocapacitors (PCs)	11
2.3.3 Hybrid Capacitors/ Asymmetric Capacitors	13

2.4	Pseudocapacitor Materials	14
2.4.1	Transition Metal Oxides	14
2.4.2	Layered Transition Metal Dichalcogenide (TMD)	15
2.5	Exfoliation of Layered Materials	16
2.6	Hydrothermal Technique	18

### **CHAPTER 3 MATERIALS AND METHODS**

3.1	Introduction	20
3.2	Material Synthesis Methods	21
3.2.1	Synthesis of Molybdenum / Tungsten Oxide	22
3.2.2	Synthesis of Molybdenum / Tungsten Dichalcogenides	23
3.2.3	Exfoliation of molybdenum / Tungsten dichalcogenides	25
3.2.4	Fabrication of Supercapacitor Electrodes	27
3.2.4.1	Cleaning step of nickel foam	27
3.2.4.2	Fabrication of electrode	28
3.3	Electrochemical Testing	30
3.4	Characterization of Molybdenum /Tungsten Dichalcogenides /Exfoliated Molybdenum /Tungsten Dichalcogenides	31

### **CHAPTER 4 RESULT AND DISCUSSION**

4.1	Introduction	32
4.2	Synthesis and Characterization of Metal Dichalcogenides and Exfoliated Metal Dichalcogenides	33
4.2.1	X-Ray Diffraction Analysis	33
4.2.2	Morphological Analysis	42
4.3	Electrochemical Analysis	48
4.3.1	Cyclic Voltammetry (CV)	48
4.3.2	Galvanostatic Charge-Discharge Cyclic (CDC)	54
4.3.3	Electrochemical impedance spectroscopy (EIS)	60

4.4	Summary	65
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## **CHAPTER 5 CONCLUSIONS AND RECOMMENDATION**

5.1	Conclusions	66
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5.2	Recommendations	66
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<b>REFERENCES</b>	<b>67</b>
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## LIST OF TABLES

Table No.	Title	Page
2.1	A comparison between capacitor, supercapacitor and battery	8
4.1	(h k l) plane, d-spacing and crystalline size of MoO <sub>3</sub>	33
4.2	(h k l) plane, d-spacing and crystalline size of MoS <sub>2</sub>	35
4.3	(h k l) plane, d-spacing and crystalline size of MoSe <sub>2</sub>	36
4.4	(h k l) plane, d-spacing and crystalline size of exfoliated MoO <sub>3</sub>	38
4.5	(h k l) plane, d-spacing and crystalline size of exfoliated MoS <sub>2</sub>	39
4.6	(h k l) plane, d-spacing and crystalline size of exfoliated MoSe <sub>2</sub>	40
4.7	Specific capacitance at 5 mV/s with 1 M KOH aqueous electrolyte determined from CV measurements	53
4.8	Specific capacitance at 0.3 A/g with 1 M KOH aqueous electrolyte determined from CDC measurements	57
4.9	Internal resistance at 0.3 A/g with 1 M KOH aqueous electrolyte determined from CDC measurements	58
4.10	R <sub>s</sub> , R <sub>ct</sub> and R <sub>d</sub> with 1 M KOH aqueous electrolyte determined from EIS measurements	64

## LIST OF FIGURES

<b>Figure No.</b>	<b>Title</b>	<b>Page</b>
1.1	Ragone plot of energy storage for ESS devices	2
2.1	Schematic diagram of commercial Zn MnO <sub>2</sub> battery	7
2.2	Structure of capacitor	8
2.3	Classification of supercapacitors	9
2.4	Structure of EDLCs	10
2.5	Structure of the EDLCs at electrode that contain positive charges: (a)Helmholtz model, (b) Gouy–Chapman model, and (c) the Stern Model	11
2.6	Types of mechanisms for pseudocapacitance : (a) underpotential deposition, (b) redox pseudocapacitance, and (c) intercalation pseudocapacitance	12
2.7	Schematic of a hybrid MnO <sub>2</sub> -graphene/AC supercapacitor	13
2.8	Specific capacitance of various electrode material	14
2.9	Crystal structure of layered transition metal dichalcogenide (a) Crystal structure of layered transition metal dichalcogenides on upper structures is layered hexagonal structure (P63/mmc symmetry group; red atoms – Mo and W; blue atoms – S ) and (b) the bottom structure corresponds to layered orthorhombic structure (Pmn21 symmetry group; green atoms – Mo and W; red atoms – Te)	16
2.10	Exfoliation mechanisms in water. (A) Ion intercalation ( B)Ion exchange. (C) Sonicationassisted exfoliation.	18
3.1	Flow chart of preparation for molybdenum /tungsten oxide	21
3.2	a) Sodium molybdate or sodium tungstate dehydrate dissolved into deionized water. b) oxalic acid is put into solution until pH 2.4 c) the powder produced from hydrothermal is put in furnace d) Molybdenum /Tungsten oxide formed	22
3.3	Procedure of preparation for molybdenum /tungsten dichalcogenide	23

3.4	a) Precursor A (Chalcogenide precursor + hydrazine hydrate) b) Precursor B (Sodium Molybdate/Sodium Tungstate dehydrate + deionized water) c) the precursor A is added into precursor B by dropper d)the autoclave put in the oven) product is formed after hydrothermal f) product after centrifuged	24
3.5	Procedure of exfoliation for molybdenum /tungsten dichalcogenide	25
3.6	a) solution that mixed with ethanol /water is sonicated b) product after sonicated c) the solution is centrifuged d) the product sedimented bottom of centrifuge tube	26
3.7	Step of cleaning nickel foam	27
3.8	Step of electrode preparation	28
3.9	a) PVDF,carbon black and NMP b) the mixture was stirred c) the mixture was brushed on the electrode d) coated electrodes e) coated electrodes were dried in oven	29
3.10	a) autolab and the 3 electrode system b) The analysis is still in progress c) 3 electrode system	30
3.11	a) X-ray diffraction (XRD) b) Field Emission Scanning Electron Microscope (FESEM)	31
4.1	X-ray diffractograms of (a) MoO <sub>3</sub> from experiment ( b) MoO <sub>3</sub> from journal	33
4.2	X-ray diffractograms of (a) MoS <sub>2</sub> from experiment ( b) MoS <sub>2</sub> from journal	35
4.3	X-ray diffractograms of (a) MoSe <sub>2</sub> from experiment (b) MoSe <sub>2</sub> from journal	37
4.4	X-ray diffractograms of (a) exfoliated MoO <sub>3</sub> from experiment (b) exfoliated MoO <sub>3</sub> from journal	38
4.5	X-ray diffractograms of (a) exfoliated MoS <sub>2</sub> from experiment ( b) exfoliated MoS <sub>2</sub> from journal	39

4.6	X-ray diffractograms of (a) exfoliated MoSe <sub>2</sub> from experiment ( b) exfoliated MoSe <sub>2</sub> from journal	41
4.7	Morphology of MoO <sub>3</sub> with different magnification; (a) 8 kx; (b) 9 kx; (c) 20 kx (d) 35 kx	42
4.8	Morphology of MoS <sub>2</sub> with different magnification; (a) 10 kx;( b) 20 kx; (c) 50 kx	43
4.9	Morphology of MoSe <sub>2</sub> with different magnification; (a) 10 kx;( b) 15 kx; (c) 20 kx	44
4.10	Morphology of exfoliated MoO <sub>3</sub> with different magnification; (a) 7.5 kx; (b) 50 kx; (c) 65 kx (d) 100kx	45
4.11	Morphology of exfoliated MoS <sub>2</sub> with different magnification; (a) 10 kx; (b) 20 kx; (c) 35 kx (d) 70kx	46
4.12	Morphology of exfoliated MoSe <sub>2</sub> with different magnification; (a) 20 kx; (b) 50 kx; (c) 80 kx (d) 120kx	47
4.13	The CV data of electrode material in 1 M KOH aqueous electrode with scan rate between 5mV/s to 100 mV/s; (a) MoO <sub>3</sub> (b) MoS <sub>2</sub> (c) MoSe <sub>2</sub> (d) exfoliated MoO <sub>3</sub> (e) exfoliated MoS <sub>2</sub> (f) exfoliated MoSe <sub>2</sub>	48
4.14	The CV data at scan rate of 5 mV/s; (a) MoO <sub>3</sub> ; (b) Exfoliated MoO <sub>3</sub> (c) MoS <sub>2</sub> (d) Exfoliated MoS <sub>2</sub> (e) MoSe <sub>2</sub> (f) Exfoliated MoSe <sub>2</sub>	51
4.15	The CV data at combination for scan rate of 5 mV/s	52
4.16	A comparison of variation scan rate with respect of specific capacitance between bulk and exfoliated metal dichalgonenides	52
4.17	The discharge curve of (a) MoO <sub>3</sub> (b) Exfoliated MoO <sub>3</sub> (c) MoS <sub>2</sub> (d) Exfoliated MoS <sub>2</sub> (e) MoSe <sub>2</sub> (f) Exfoliated MoSe <sub>2</sub> electrode as a function of current densities in 1 M KOH aqueous electrolyte	54
4.18	The first charge-discharge curves of ( a) MoO <sub>3</sub> (b) Exfoliated MoO <sub>3</sub> (c) MoS <sub>2</sub> (d) Exfoliated MoS <sub>2</sub> (e) MoSe <sub>2</sub> (f) Exfoliated MoSe <sub>2</sub> in 1 M KOH aqueous electrolyte at galvanostatic current density of 0.3 A/g	55
4.19	A variation of specific capacitance with current density in MoO <sub>3</sub> , exfoliated MoO <sub>3</sub> , MoS <sub>2</sub> , exfoliated MoS <sub>2</sub> , MoSe <sub>2</sub> and exfoliated MoSe <sub>2</sub> electrode	56
4.20	A comparison Ragone plots of the MoO <sub>3</sub> , exfoliated MoO <sub>3</sub> , MoS <sub>2</sub> ,	59

	exfoliated MoS <sub>2</sub> , MoSe <sub>2</sub> and exfoliated MoSe <sub>2</sub> electrodes	
4.21	Nyquist plots of the MoO <sub>3</sub> , exfoliated MoO <sub>3</sub> , MoS <sub>2</sub> , exfoliated MoS <sub>2</sub> , MoSe <sub>2</sub> and exfoliated MoSe <sub>2</sub> electrodes	60
4.22	A combination of Nyquist plot for the MoO <sub>3</sub> , exfoliated MoO <sub>3</sub> , MoS <sub>2</sub> , exfoliated MoS <sub>2</sub> , MoSe <sub>2</sub> and exfoliated MoSe <sub>2</sub> electrodes	63

## LIST OF SYMBOLS

A/g	Ampere per gram
Å	Angstrom ( $10^{-10}$ )
~	Approximately
°C	Degree celcius
h	Hour
%	Percentage
R	Rententivity
<i>t</i>	Time
V	Potential
v	Scan rate
s	Second
$\lambda$	Wavelength
>	Bigger than
<	Smaller than

## LIST OF ABBREVIATIONS

CDC	Charge-discharge
$C_d$	Current density
$C_{GS}$	Capacitance of Guoy-chapman
$C_H$	Helmholz capacitance
$C_s$	Specific capacitance
CV	Cyclic voltammetry
2 D	Two dimensional
EC	Electrochemical capacitors
EDLC	Electric double-layer capacitors
EES	Electrical energy storage
EIS	Electrochemical impedance spectroscopy
$E_s$	Energy density
FESEM	Field emission scanning electron microscopy
NMP	N-methyl pyrrolidionone
PC	Pseudocapacitor
$P_s$	Power density
PVDF	Polyvinylidonce fluoride
TMD	Transition metal dichalcogenides
XRD	X-ray diffraction