

## Curriculum Vitae



### 1. BASIC PROFILE

Name :	Kelimah Anak Elong
Faculty/Institute :	1. Faculty of Applied Sciences, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia 2. Institute of Science, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia
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Current position	Lecturer DM45
Date/Year of Appointment	02 December 2013

### 2. QUALIFICATION

No.	Qualification	University/ Institute	Graduation Date
1	M.Sc (Science)	Universiti Teknologi MARA, Shah Alam, Selangor	2013
2	BSc.(Hons) Chemistry	Universiti Teknologi MARA, Shah Alam, Selangor	2009
3	Matriculation (Physical Science)	Kolej Matrikulasi Labuan	2006
4	Sijil Pelajaran Malaysia (SPM)	Sekolah Menengah Kebangsaan Sungai Paoh	2004

### 3.0 RESEARCH AREAS

No.	Research Area	Year
1	Natural product and organic chemistry (Final Year Project)	2008-2009
2	Nanomaterials and nanostructures metal oxides	2010- present
3	Cathode materials for Li-ion batteries application	2010- present
4	Characterization methods: STA, XRD, XPS, FESEM, HRTEM, Cyclic Voltammetric, Charge-Discharge Cycling	2010- present

#### 4.0 POSTGRADUATE SUPERVISION

##### 4.1 On-Going Phd Supervision (Includes Co-supervision)

No	Students Name	Institutions	Year Enrolled	Supervision
1	Nur Farhana Yahya	UiTM	2015	Co-supervisor
2	Nor Syamilah Syamimi bt Mohd Abdillih	UiTM	2016	Co-supervisor

##### 5.0 NATIONAL LEVEL ACTIVE RESEARCH FUNDING (MOSTI/FRGS & Others)

	Research Project	Source	Total Funds	Begin Year	End Year
1	Principal Researcher, Materials Characterization and Electrochemical Performance Of $\text{LiMn}_{2-x}\text{Ti}_x\text{O}_4$	LESTARI	RM20,000	2016	2018
2	Co-Researcher, Structural Stability of Partial Substitutional Ti in $\text{LiMn}_2\text{O}_4$ Cathode Materials	BESTARI	RM50,000	2016	2018
3	Co-Researcher, Enhancing The Performance Of $\text{SnO}_2$ Anodes With Graphene Additives In Li-Ion Cells	PRGS	RM100,000	2016	2018
4	Co-Researcher, Synthesis, Characterization And Band Gaps Of $\text{ZnO}$ and $\text{Zn}_{(1-x)}\text{Mn}_x\text{O}$ Nanomaterials	LESTARI	RM20,000	2017	2019
5	Co-Researcher, Charge-Discharge Properties $\text{LiCo}_{0.3}\text{Ni}_{(0.7-x)}\text{Ti}_x\text{O}_2$ Cathode Materials and Their Chemical Configuration	FRGS	RM100,912	2017	2019
6	Principal Researcher, The Crystal Structure Of $\text{LiCo}_{0.3}\text{Ni}_{0.3}\text{Mn}_{0.3}\text{Ti}_{1-x}\text{Sn}_x\text{O}_2$ Cathode Materials	FRGS	RM68,900	2017	2019
7	Co-Researcher, Synthesis And Characterization Of $\text{MgO}$ And $\text{Mg}_{1-x}\text{Cu}_x\text{O}$ Nanomaterials And Their Band Gap Energies	LESTARI	RM20,000	2017	2019

#### 6. MEMBERS OF PROFESSIONAL BODIES/SOCIETIES

No.	University/Research Institution/Industry	National/International	Year
1	Centre of Nanomaterials (CNR), Institute of Science, UiTM (member)	National	2009-present
2	Microscopy Society of Malaysia (MSM)-(Life Committee member)	National	2013-present
3	Institut Kimia Malaysia (IKM) (member)	National	2016-present
4	The Malaysian Solid State Science & Technology Society (MASS)	National	2017-present

## 7. PUBLICATIONS

### 7.1 INTERNATIONAL JOURNAL

No.	Publication details
1.	<b>Kelimah Elong</b> , Norlida Kamarulzaman, Roshidah Rusdi, Nurhanna Badar and Mohd Hilmi Jaafar, "Solid Solutions of $\text{LiCo}_{1-x}\text{Ni}_x\text{O}_2$ ( $x=0, 0.1, \dots, 0.9$ ) Obtained via a combustion synthesis route and their electrochemical characteristics", <i>ISRN Condensed Matter Physics</i> , Volume 2013, Article ID 568191, 8pages IF: 0.757, ISI
2.	Jaafar, M.H., Kamarulzaman, N., <b>Elong, K.</b> , Mohamed, N.S., Rusdi, R., "Influence of calcination temperature on the electrochemical behaviour of novel $\text{LiMn}_{0.3}\text{Co}_{0.3}\text{Ni}_{0.3}\text{Cr}_{0.1}\text{O}_2$ Cathode Materials for high energy density Li-ion batteries", <i>International Journal of Electrochemical Science</i> 8 (2), (2013) pp. 2254-2261. IF: 3.729, Q3, ISI
3.	Roshidah Rusdi, Norlida Kamarulzaman, <b>Kelimah Elong</b> , Hashlina Rusdi, and Azilah ABD Rahman, "Electrochemical Performance of overlithiated $\text{Li}_{1+x}\text{Ni}_{0.8}\text{Co}_{0.2}\text{O}_2$ : structural and oxidation state studies", <i>Frontier Material Science</i> 9(2) 2015, pp 199-205. IF: 1.471, Q2, ISI
4.	N. Kamarulzaman, N. F. Chayed, N. Badar, M. F. Kasim, D. T. Mustafa, <b>K. Elong</b> , R. Rusdi, T. Oikawa and H. Furukawa, "Band gap narrowing of 2-D Ultra-thin MgO graphene-like sheets", <i>ECS Journal of Solid State Science and Technology</i> , 5 (11) Q1-Q8 (2016), Electrochemical Soc Inc (ECS), IF: 1.787, Q2, ISI
5.	N. Kamarulzaman, A. Azahidi, <b>K. Elong</b> , M.F. Kasim, R. Rusdi, N.M.A.M. Mokhtar, N.D.A. Aziz, Z. Osman, "Characteristic of Ti And Fe doped $\text{LiCo}_{0.6}\text{Ni}_{0.4}\text{O}_2$ cathode materials for rechargeable batteries", <i>Materials Research Express</i> , Volume 4, Issue 4, (2017), pp 046301 IF: 1.068, Q3, ISI
6.	J. Matmin, M.A. Jalani, H. Osman, Q. Omar, N. Ab'lah, <b>K. Elong</b> , M.F. Kasim, "Photochemical synthesis of nanosheet tin di/sulfide with sunlight response on water pollutant degradation", <i>Nanomaterials</i> <b>2019</b> , 9(2), 264 IF: 3.504, Q1, ISI
7.	Nurhanna Badar, Norlida Kamarulzaman, Annie Maria Mahat, Nor Fadilah Chayed, and <b>Kelimah Elong</b> , "Studies on the Characteristics and the Effect of Thickness on the Band Gap Energies of $\text{Al}_2\text{O}_3$ Thin Films Prepared by PLD", <i>Solid State Phenomena</i> , 290, 163-167 (2019), Scopus Q4
8.	Nor Fadilah Chayed, Norlida Kamarulzaman, Nurhanna Badar and <b>Kelimah Elong</b> , "Effect of Cu Doped in MgO on Nanostructures and their Band Gap Energies", <i>Solid State Phenomena</i> , 290, 323-328 (2019), Scopus Q4
9.	Nor Fadilah Chayed, Nurhanna Badar, <b>Kelimah Elong</b> and Norlida Kamarulzaman, "Effect of Li substitution in MgO on Band Gap Energy via combustion synthesis method", <i>Solid State Phenomena</i> , 301, 97 – 102 (2020), Scopus Q4
10.	Nor Syamilah Syamimi Mohd Abdillih, Norlida Kamarulzaman, <b>Kelimah Elong</b> , Nurhanna Badar, Mohd Sufri Mastuli, "Electrochemical Performance of Mn and Fe Substitution in $\text{LiCoO}_2$ Cathode Materials", <i>Solid State Phenomena</i> , 301, 195 – 201 (2020), Scopus Q4
11.	Nor Syamilah Syamimi Mohd Abdillih, Norlida Kamarulzaman, <b>Kelimah Elong</b> , Mohd Sufri Mastuli, "Effect on Electrochemical Performance of Cr and Ni Substitution in $\text{LiCoO}_2$ Cathode Materials", <i>Solid State Phenomena</i> , 307, 113 – 118 (2020), Scopus Q4
12.	Nor Fadilah Chayed, Nurhanna Badar, Kelimah Elong, Norlida Kamarulzaman, "Band Gap Narrowing of MgO and $\text{MgO}_{0.95}\text{ZnO}_{0.05}$ Nanostructures", <i>Solid State Phenomena</i> , 307, 273 - 278 (2020), Scopus Q4
13.	Michelle Matius, Norlida Kamarulzaman, Mohd Sufri Mastuli, Nor Syamilah Syamimi Mohd Abdillih, Kelimah Elong <i>Solid State Phenomena</i> , 307, 136 – 140 (2020), Scopus Q4
14.	Wan Aida Hazwani Wan Azizan, Muhd Firdaus Kasim, Kelimah Elong, Roshidah Rusdi, Rizuan Mohd Rosnan, Norlida Kamarulzaman, "Effects of Al-dopant at Ni or Co sites in $\text{LiNi}_{0.6}\text{Co}_{0.3}\text{Ti}_{0.1}\text{O}_2$ on interlayer slabs (Li-O) and intralayer slabs (TM-O) and their influence on the electrochemical performance of cathode materials", <i>Royal Society of Chemistry</i> , 10 (2020) 40291 – 40299. IF: 3.119, Q1

## 7.2 International Proceedings

No.	Publication details
1.	<b>Kelimah Elong</b> , Roshidah Rusdi, Nurul Atikah Mohd Mokhtar, Azira Azahidi and Norlida Kamarulzaman, "Materials characterization and charge-discharge profile of $\text{LiNi}_{1-x}\text{Co}_x\text{O}_2$ cathodic materials for Li-ion battery application", <i>Advanced Materials Research</i> , Vol. 545 (2012) pp 182-184
2.	Norlida Kamarulzaman, Norashikin Kamarudin, Roshidah Rusdi, <b>Kelimah Elong</b> , Mohd Hilmi Jaafar, "Synthesis and Electrochemical Behaviour of Lithium Manganese Vanadates", <i>Advanced Materials Research</i> , Vol. 545 (2012) pp 195-198
3.	Azilah Abd Rahman, Roshidah Rusdi, <b>Kelimah Elong</b> and Norlida Kamarulzaman, "Synthesis and Electrochemical Behaviour of $\text{LiMn}_{(2-x)}\text{Zn}_x\text{O}_4$ Cathode Materials", <i>Advanced Materials Research</i> , Vol. 545 (2012) pp 199-203
4.	Azira Azahidi, <b>Kelimah Elong</b> , Nurhanna Badar, Nurul Atikah Mohd Mokhtar, Roshidah Rusdi and Norlida Kamarulzaman, "Mn as a substituted cation in $\text{LiCoO}_2$ cathode materials", <i>Advanced Materials Research</i> , Vol. 545 (2012) pp 204-208
5.	Nurul Atikah Mohd Mokhtar, Azira Azahidi, <b>Kelimah Elong</b> , Nurhanna Badar, Roshidah Rusdi and Norlida Kamarulzaman, "Investigation of the Overlithiation of Layered $\text{LiNi}_{0.7}\text{Co}_{0.2}\text{Fe}_{0.1}\text{O}_2$ Material", <i>Advanced Materials Research</i> , Vol. 545 (2012) pp 209-213
6.	Norlida Kamarulzaman, <b>Kelimah Elong</b> , Roshidah Rusdi, Nor Fadilah Chayed, Nurhanna Badar and Lili Widarti Zainudin, "Influence of carbon additives on cathode materials, $\text{LiCoO}_2$ and $\text{LiMn}_2\text{O}_4$ ", <i>Advanced Materials Research</i> , Vol. 545 (2012) pp 214-219
7.	Annie Maria Mahat, <b>Kelimah Elong</b> , Nor Diyana Abdul Aziz, Mohd Sufri Mastuli and Norlida Kamarulzaman, "Conductivities of Titanium Dioxide Obtained via the Sol-gel Method", <i>Advanced Materials Research</i> , Vol. 545 (2012) pp 143-147
8.	Azira Azahidi, <b>Kelimah Elong</b> , Nurhanna Badar, Nurul Atikah Mohd Mokhtar, Roshidah Rusdi, Norlida Kamarulzaman, "Mn Substitution with Co in $\text{LiCo}_{(1-x)}\text{Mn}_x\text{O}_2$ Cathode Materials and their Charge-discharge Characteristic", <i>Advanced Materials Research</i> , Vol. 501 (2012) pp 133-137
9.	Azilah Abd Rahman, Roshidah Rusdi, Nurhanna Badar, <b>Kelimah Elong</b> , Norlida Kamarulzaman, "The Effect of the Different Types of Crucibles on ZnO Nanostructures", <i>Malaysian Journal of Microscopy</i> Vol.8 (2012) pp 110-113.
10.	<b>Kelimah Elong</b> , Norlida Kamarulzaman, "Effect of high-energy ball milling on the charge-discharge behaviour of $\text{LiCo}_{0.3}\text{Ni}_{0.7}\text{O}_2$ ", <i>Advanced Materials Research</i> Vol. 895 (2014) pp 400-403.
11.	Norlida Kamarulzaman, Azira Azahidi, <b>Kelimah Elong</b> , Nurul Atikah Mohd Mokhtar and Nurshafiza Mohdi, "Effect of Calcination Time on the Specific Capacities of $\text{LiNi}_{0.4}\text{Co}_{0.55}\text{Ti}_{0.05}\text{O}_2$ Cathode Materials", <i>Advanced Materials Research</i> Vol. 895 (2014) pp 351-354.
12.	Azira Azahidi, Norlida Kamarulzaman, <b>Kelimah Elong</b> , Nurhanna Badar and Nurul Atikah Mohd Mokhtar, "Electrochemical Behavior of $\text{LiCo}_{(1-x)}\text{Mn}_x\text{O}_2$ Crystalline Powders", <i>Advanced Materials Research</i> Vol. 895 (2014) pp 334-337.
13.	N.A.M. Mokhtar, A. Azahidi, <b>K. Elong</b> , N. Badar, N. Kamarulzaman, "The effect of Fe and Al Substitution in $\text{LiNi}_{0.8}\text{Co}_{0.2}\text{O}_2$ Cathode Material", <i>Advanced Materials Research</i> Vol. 895 (2014) pp 355-358.
14.	Hashlina Rusdi, Norlida Kamarulzaman, Roshidah Rusdi, <b>Kelimah Elong</b> , Azilah Abd Rahman, "Overlithiation of $\text{LiNi}_{0.8}\text{Co}_{0.2}\text{O}_2$ for Increased Performance in Li-Ion Batteries", <i>Advanced Materials Research</i> Vol. 938 (2014) pp 253-256.
15.	Nor Diyana Abdul Aziz, <b>Kelimah Elong</b> , Norlida Kamarulzaman, "Phase and Particle Size Analysis of $\text{SnO}_2$ Nanomaterials", <i>Advanced Materials Research</i> Vol 1109 (2015) pp 314-318.
16.	N. H. Zainol, Z. Osman, N. Kamarulzaman, and <b>K. Elong</b> , "Study of cathode material, $\text{LiNi}_{0.7}\text{Co}_{0.3-(x+y)}\text{Ti}_x\text{Sn}_y\text{O}_2$ ( $x=0.1; y=0.01$ ) prepared by combustion method", <i>AIP Conference Proceedings</i> , volume 1711, 12 February 2016, pp 060004

17	<b>Kelimah Elong</b> , Norlida Kamarulzaman and Roshidah Rusdi, " Ti Doped LiMn <sub>1/3</sub> Co <sub>1/3</sub> Ni <sub>1/3</sub> O <sub>2</sub> for Li-ion Battery Application", Materials Science Forum, (2016)Vol. 846, pp 493-496.
18	A. Azahidi, R. Rusdi, N.A.M. Mokhtar, <b>K. Elong</b> , "Fe doped LiCo <sub>0.6</sub> Ni <sub>0.4</sub> O <sub>2</sub> and their electrochemical behavior", AIP Conference Proceedings. Volume 1877 (2017), pp 130592
19	N.A.M. Mokhtar, A. Azahidi, R. Rusdi, <b>K. Elong</b> , "The electrochemical performance of layered LiNi <sub>0.8-x</sub> Co <sub>0.2</sub> M <sub>x</sub> O <sub>2</sub> (M= Fe and Al) cathode materials", AIP Conference Proceedings. Volume 1877 (2017), pp 040007
20	N.F. Yahya, N. Kamarulzaman, <b>K. Elong</b> , N.A.M. Mokhtar, A.F.M. Fadzil, N.H. Zainol, A. Azahidi, "Synthesis of LiMn <sub>1.9</sub> Ti <sub>0.1</sub> O <sub>4</sub> ", AIP Conference Proceedings. Volume 1877 (2017), pp 040008
21.	<b>K. Elong</b> , N. Kamarulzaman, R. Rusdi, "Effect of different stoichiometry on the electrochemical behavior of LiCo <sub>x</sub> Ni <sub>1-x</sub> O <sub>2</sub> cathode materials", IOP Conf. Series: Journal of Physics: Conf. Series 1083 (2018) 012031
22.	Wan Aida Hazwani Wan Azizan, Muhd Firdaus Kasim, Roshidah Rusdi, <b>Kelimah Elong</b> , "Al doped LiNi <sub>0.6</sub> Co <sub>0.3-x</sub> Ti <sub>0.1</sub> Al <sub>x</sub> O <sub>2</sub> cathode material via combustion method", Journal of Physics: Conference Series, 1535 (2020) 012026.
23.	Nurhanna Badar, Norlida Kamarulzaman, Nor Fadilah Chayed, Kelimah Elong, Ri Hanum Yahaya Subban," Band Gap Narrowing of Mg <sub>1-x</sub> Cu <sub>x</sub> O Nanostructured Materials", Journal of Physics: Conference Series, 1535 (2020) 012023.
24.	K Elong, N Kamarulzaman, NF Chayed, N Badar, NSSM Abdillih," Phase and Morphological Studies of LiCo <sub>0.3</sub> Ni <sub>0.3</sub> Mn <sub>0.3</sub> Ti <sub>0.1-x</sub> Sn <sub>x</sub> O <sub>2</sub> Cathode Materials", Journal of Physics: Conference Series, 1535 (2020) 012041.

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