

CURRICULUM VITAE



RADHIYAH ABD AZIZ

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EDUCATION BACKGROUND:

2012-2016: Doctor of Philosophy (Advanced Materials)

Faculty of Science and Technology, UMP

Thesis: Synthesis and Characterization of Layered Alkaline Manganates, Titanates, and Molybdates for Supercapacitor Applications

2007- 2009: Masters of Science in Materials Engineering (Full time by research)

Thesis: Development of TiO₂-SiO₂ Thin Film for Air Purification

2003-2007: Bachelor of Materials Engineering, International Islamic University
Malaysia

Expertise Area:

Energy storage devices (e.g.; Supercapacitor, Li-ion battery), synthesis of nanoscale materials, thin film, electrochemistry, photocatalysis.

PROFESSIONAL MEMBERSHIPS:

Registered Member of Institution of Engineers Malaysia (IEM)

PUBLICATIONS:

- **Radhiyah Abd Aziz**, Saifful Kamaluddin Muzakir, Izan Izwan Misnon, Jamil Ismail, Rajan Jose. “*Hierarchical Mo₉Se₁₁ nanoneedles on nanosheet with enhanced electrochemical properties as a battery-type electrode for asymmetric supercapacitors.*” Journal of Alloys and Compounds, 673 (2016), 390-398
- R. Jose, S. G. Krishnan, B. Vidyadharan, I. I. Misnon, M. Harilal, **R. A. Aziz**, J. Ismail, M. M. Yusoff. “*Supercapacitor electrodes delivering high energy and power densities.*” Materials Today: Proceedings 3S (2016) S48 – S56.

- **A. A. Radhiyah**, M. Izan Izwan, V. Baiju, C. Kwok Feng, I. Jamil and R. Jose. “*Doubling of electrochemical parameters via the pre-intercalation of Na⁺ in layered MnO₂ nanoflakes compared to α-MnO₂ nanorods*”, RSC Advances,5 (2015) 9667.
- Izan Izwan Misnon, Nurul Khairiyah Mohd Zain, **Radhiyah Abd Aziz**, Baiju Vidyadharan, Rajan Jose. “*Electrochemical properties of carbon from oil palm kernel shell for high performance supercapacitors.*” Electrochimica Acta 174 (2015):78–86
- I. I. Misnon, B. Vidyadharan, **R. A. Aziz**, R. Jose. “*High Performance Flower Shape Manganese Oxide for Asymmetric Supercapacitor Device.*” Journal of Engineering and Technology, Vol 6. No. 1 January-June 2015.
- B. Vidyadharan, I. I. Misnon, **R.A. Aziz**, K. P. Padmasree, M.M. Yusoff, and R. Jose, “*Superior Supercapacitive performance in electrospun Copper oxide nanowire electrode*” J.Mater.Chem.A,(2014),2,6578
- Izan Izwan Misnon; **Radhiyah Abd Aziz**; Nurul Khairiyah Mohd Zain; Baiju Vidyadharan; Mashitah Mohd Yusoff, Rajan Jose, “*High performance MnO₂ nanoflower electrode and the relationship between solvated ion size and specific capacitance in highly conductive electrolytes.*” Materials Research Bulletin, 57 (2014), 221-230.
- Baiju Vidyadharan, Nurul Khairiyah Mohd Zain, **Radhiyah Abd Aziz**, Izan Izwan Misnon, Mashitah Yusoff, Rajan Jose, “*High Performance Supercapacitor Electrodes from Electrospun Nickel Oxide Nanowires*” Journal of Alloys and Compounds 610 (2014),143-150.
- Baiju Vidyadharan, **Radhiyah Abd Aziz**, Izan Izwan Misnon, Nurul Khairiyah Mohd Zain, Anil Kumar G.M., Jamil Ismail, Mashitah Yusoff, Rajan Jose. “*High energy and power density asymmetric supercapacitors using electrospun cobalt oxide nanowire anode*”. Journal of Power Source 270(2014), 526-535.
- **Radhiyah Abd Aziz**, Izan Izwan Misnon, Kwok Feng Chong, Mashitah Yusoff, Rajan Jose, “*Layered sodium titanate nanostructures as a new electrode for high energy density supercapacitors*”. Electrochimica Acta 113 (2013) 141– 148.
- **Radhiyah A. Aziz**, Norhanita M. Yusof and Abdul K. Masrom. “*Effect of Ultrasonic Irradiation Time and Amplitude Variation on TiO₂ Particles.*” Solid State Science and Technology, Vol. 19, No2 (2011) 371-383.
- **Radhiyah Abd Aziz**, and Iis Sopyan, “*Recent Progress on Development of TiO₂ Thin Film for Pollutants Removal*”. Recent Patents on Materials Science 2009, 2, pp. 88-111.
- **Radhiyah Abd Aziz**, and Iis Sopyan, *Synthesis of TiO₂-SiO₂ Powder and Thin Film Using Sol-Gel Method for Air Purification*. Indian Journal of Chemistry Vol. 48A, July 2009, pp. 951-957.
- **Radhiyah Abd Aziz**, Nor Asyikin Mohd Bajuri, Iis Sopyan. “*Synthesis of TiO₂-SiO₂ Powder Photocatalyst Using Different Type of Metal Alkoxide via Sol-Gel Method.*” Institute of Engineers Malaysia. , vol. 7, No. 4, December 2009, pp. 34-40.

CONFERENCE PROCEEDINGS:

- Record specific capacitance from activated carbon derived from waste palm kernel shells, Am. Chem. Soc., Div. Energy Fuels 2013, 58 (1), xxxx, 245th ACS National Meeting & Exposition, New Orleans, Louisiana, April 7-11, 2013
- Effect of layered structure in manganese oxide nanowire as a suitable electrode material for supercapacitor, BOND21, Ferringhi, Penang.
- Application of One Dimensional Nanostructure of Metal Oxide Materials for Enhanced Energy Storage Devices. Nanomaterials and Nanotechnology Specialized Conference 2012, UTM, Johor.
- Nor Hafizah Ahmad Tarmizi, **Radhiyah Abd. Aziz**, and Iis Sopyan, “*The Development of Cement Bonded TiO₂ Photocatalyst for Phenol Removal.*” Proceedings of International Conference on MEMS and Nanotechnology (ICMN08), Kuala Lumpur 11-13 May 2008, pp 73-76, 2008.
- **Radhiyah Abd Aziz**, and Iis Sopyan, “*Synthesis of TiO₂-SiO₂ Powder Using Sol-Gel Method for Photocatalyst Applications*”. Sixth International Symposium on Southeast Asian Water Environment in Bandung, Indonesia, October 30-31, 2008.

LIST OF PATENTS FILED:

- *A Method of Preparing Layered Alkaline Transition Metal Oxide Nanostructure.* (PI2014001646)
Inventors: R. Jose, **Radhiyah Abd Aziz**, I. I. Misnon, M. M. Yusoff.
- *Fabrication of Highly Efficient Supercapacitors From Waste Palm Kernel Shells and a Process for the Same* (UI2013700979)
Inventors: R. Jose, Nurul Khairiyah, Izan Izwan Misnon, **Radhiyah Abd Aziz**, Mashitah Mohd Yusoff
- *Energy storage devices* (PI 2013003071)
Inventors: R. Jose, B. Vidyadharan, I. I. Misnon, **Radhiyah Abd Aziz**, M. M. Yusoff
- *Novel flower-like MnO₂ and MnO₂-PANi composites for energy storage application.* (PI 2013003169)
Inventors: R. Jose, I. I. Misnon, **Radhiyah Abd Aziz**, M. M. Yusoff.
- *Synthesis and application of titanium dioxide - silicon dioxide (TiO₂-SiO₂) photocatalyst powder,* (PI No.20084584).
Inventors: Iis Sopyan and **Radhiyah Abd Aziz**.

AWARDS AND ACHIEVEMENTS:

- **Gold Medal** in CITREX2013, UMP. “*High Energy Density Cum Power Density Supercapacitors From Engineered Materials.*”
- **Silver medal** in ITEX2013, KLCC, “*High Energy Density Cum Power Density Supercapacitors From Engineered Materials.*”
- **Gold Medal** in INPEX2013, Pittsburgh USA, “*Clean Energy Storage Device From Oil Palm Waste.*”

- **Gold Medal and Best of The Best Award** in MTE2013, “*High Performance Supercapacitor Using Activated Carbon Derived From Waste Palm Oil Kernel Shells.*”
- **Silver Medal** in CITREX 2013, UMP, “*A ‘Green’ supercapacitor device employing waste to wealth.*”
- **Gold Medal** in CITREX2012, UMP. “*Nanostructured Metal Oxide Flowers and Wires for Advanced Electronics and Renewable Energy*”
- **Silver Medal** in ITEX 2012, KLCC. “*Hydrothermal Synthesis of Various Morphology of Metal Oxide for Electrochemical Applications.*”
- **Gold medal** in iENA 2008 and International Trade Fair for Ideas Inventions New Products on 29 October 2008 for the invention of “*High Performance TiO₂ Powder Photocatalysts for Efficient Solar Energy Conversion*”.
- **Silver medal** in The Belgian and International Trade Fair for Technological Innovation, “EUREKA” Brussels Belgium on 24 November, 2007 for the invention of “*A Novel Method to Produce Nanosized TiO₂ Powder for Photocatalyst Application*”.
- **Gold medal** in Kerie 2007 (IIUM) on 12-13 December, 2007 for the innovation of “*A Novel and Simple Method to Produce Nano-Sized TiO₂ Powder Photocatalyst*”.

RESEARCH PROJECT

RDU150321 | Synthesis and Characterization of Layered Molybdenum Diselenide Nanostructures for Energy Storage Applications | Project member