



TAN WINIE

B. Sc.(Hons.) Computational Physics & Electronics, University Malaya
Ph.D. (Advanced Materials), University Malaya

Current roles and responsibilities:

1. Fellow, Center for Functional Materials and Nanotechnology, Institute of Science
2. Associate Professor, Faculty of Applied Sciences

Honors Awards & Showcase:

1. MTE 2019 – 1 Special Award, 1 Gold & 1 Silver
2. ITEX 2019 – 1 Gold
3. ITEX 2018 – 1 Gold
4. Anugerah Inovasi Negeri Selangor – Hadiah Utama

Research Grant

- Solid State or Gel Electrolytes and Their High Performance Flexible Solid State Supercapacitors Fabrication and Characterizations
- Designing Solid-State Supercapacitor for Electronic Gadget using Hexanoyl Chitosan/ENR Polymer Electrolyte and FeCo₂O₄ Electrode
- Light Absorbance and Adhesion Properties of Sensitizer Extracted from Sargassum spinosum Seaweed
- Penggalakan Penggunaan Teknologi Hijau: Daripada Tenaga Matahari Kepada Tenaga Elektrik
- Interfacial Adhesion of Incompatible Hexanoyl Chitosan/Epoxidised Natural Rubber Blends with Addition of Inorganic Salt
- Quality Control Certificate of Polymeric Coating on Steel Pipeline as Benchmark for Paint Industry
- Morphology-Mechanical Relaxation of Compatible Poly(ethylene oxide)/Poly(butadiene-g-acrylate) with Addition of Inorganic Salt
- **Total Number of Grant: 34**

Consultancy

- Institute of Materials Malaysia
- Norimax Sdn. Bhd.
- Materials Technology Education Sdn. Bhd.

Books & Editorial

- **BOOK** – "Polymer Electrolytes: Characterization Techniques and Energy Applications". Editors: Tan Winie, A.K. Arof, Sabu Thomas, Wiley-VCH, ISBN: 978-3-527-34200-6, 2020
- **PROCEEDINGS** - Materials Today: Proceedings Vol. 17(P2), ISSN 2214-7853, 2019
- **PROCEEDINGS** - International Symposium on Materials and Assets Integrity (ISMAI 2016) "Advancements and Innovations in Materials and Asset Integrity Analysis and Management" during 10th International Materials Technology Conference & Exhibition (IMTCE 2016), ISSN 0947-7047.2017
- **PROCEEDINGS** - Materials Today: Proceedings Vol. 4 (4PC), ISSN 2214-7853, 2017

Selected Journals & Publications

- "The Synergistic Effect of Iron Cobaltite Compare to Its Single Oxides as Cathode in Supercapacitor" Journal of Electroceramics 44 (2020) pg. 183-194
- "Dye-Sensitized Solar Cell Based on Poly(ϵ -caprolactone) Gel Polymer Electrolyte and Cobalt Selenide Counter Electrode" Journal of Polymer Research 27 (2020) 103
- "Influence of 1-methyl-3-propylimidazolium Iodide Ionic Liquid on the Performance of Dye-Sensitized Solar Cell Using Hexanoyl Chitosan/Poly(vinyl chloride) Based Polymer Electrolyte" Optik 208 (2020) 164558
- "Improved Long-Term Stability of Dye-sensitized Solar Cells Employing PMA/PVAc Based Gel Polymer Electrolyte" Optical Materials 96 (2019) 109349
- "Stability Improvement by Incorporating Poly(ϵ -caprolactone) in Dimethylformamide-Potassium Iodide Liquid Electrolyte for Dye-sensitized Solar Cells" Journal of Solid State Electrochemistry 23(8) (2019) pg. 2411-2421

- Tan Winie, Asheila Jamal, F.I. Saaid and T.-Y. Tseng, "Hexanoyl Chitosan/ ENR25 Blend Polymer Electrolyte System for Electrical Double Layer Capacitor" *Polymers Advanced Technologies* 30 (2019) pg. 726-735
- F.H. Muhammad, R.H.Y. Subban and Tan Winie, "Solid Solutions of Hexanoyl Chitosan/Poly(vinyl chloride) Blends and NaI for All-Solid-State Dye-Sensitized Solar Cells", *Ionics* 25 (2019) pg. 3373 – 3386
- C.-C. Yang, H.-Y. Lin, A. Kumar, B. Pattanayak, H.-Y. Tsai, Tan Winie and T.-Y. Tseng, "Flexible Solid-Like Electrolytes with Ultrahigh Conductivity and Their Applications in All-Solid-State Supercapacitors" *RSC Advances* 8 (2018) pg. 30239 – 30247
- Tan Winie, Amisha Azmar and M.D. Rozana, "Ionic Liquid Effect for Efficiency Improvement in Poly(methyl acrylate)/ Poly(vinyl acetate) Based Dye-Sensitized Solar Cells" *High Performance Polymers* 30(8) (2018) pg. 937-948
- Amisha Azmar, M.D. Rozana and Tan Winie. "Characterization of PMA-TPAI and PVAc-TPAI Solid Polymer Electrolytes and Application in Dye-Sensitized Solar Cell" *Journal of Applied Polymer Science* 135 (2018) pg. 46835
- F.I. Saaid, T.-Y. Tseng and Tan Winie. "PVdF-HFP Quasi-Solid-State Electrolyte for Application in Dye-Sensitized Solar Cells" *International Journal of Technology* 6 (2018) pg. 1187 – 1195
- Asheila Jamal, F.H. Muhammad, A.M.M. Ali and Tan Winie, "Blends of Hexanoyl Chitosan/Epoxidized Natural Rubber Doped with EmImTFSI", *Ionics* 23 (2017) pg. 357-366.
- F.H. Muhammad, Asheila Jamal and Tan Winie, "Study on factors governing the conductivity performance of a polymer electrolyte", *Ionics* 23 (2017) pg. 3045-3056.
- F.Harun, C.H. Chan and Tan Winie, "Influence of Molar Mass on the Thermal Properties, Conductivity and Intermolecular Interaction of Poly(ethylene oxide) Solid Polymer Electrolytes", *Polymer International* 66 (2017) pg. 830-838
- Suhaila Idayu Abdul Halim, Chan Chin Han and Tan Winie, "Thermal, Conductivity and Molecular Interaction Studies of Poly(ethylene oxide)/Poly(methyl acrylate) Solid Polymer Electrolytes, *Macromolecule Symposia* 371 (2017) pg. 114-124.
- Tan Winie and A.K. Arof, "Effect of various plasticizers on the transport properties of hexanoyl chitosan-based polymer electrolyte", *Journal of Applied Polymer Science* 101(6) (2006) 4474-4479
- Tan Winie and N.S.M. Shahril, "Conductivity Enhancement by Controlled Percolation of Inorganic Salt in Multiphase Hexanoyl Chitosan/Polystyrene Polymer Blends", *Frontiers of Materials Science* 9(2) (2015), pg. 132-140
- Tan Winie, N.S.M. Shahril, C.H. Chan and A.K. Arof, "Selective Localization of LiCF₃SO₃ in the Blend of Hexanoyl Chitosan and Polystyrene", *High Performance Polymers* 26(6) (2014), pg. 666-671
- Tan Winie, N.S.M. Hanif, C.H. Chan and A.K. Arof, "Effect of the Surface Treatment of the TiO₂ Fillers on the Properties of Hexanoyl Chitosan-Polystyrene Blend-Based Composite Polymer Electrolytes", *Ionics* 20(3) (2014), pg. 347 –352
- C.H. Chan, H-W. Kammer, L.H. Sim, S.N.H. Yusoff, A. Hashifudin and Tan Winie, "Conductivity and Dielectric Relaxation of Li Salt in Poly(Ethylene Oxide) and Epoxidized Natural Rubber Polymer Electrolytes", *Ionics* 20(2) (2014), pg.189 –199
- C.H. Chan, H.-W. Kammer, L.H. Sim and Tan Winie, "On the thermodynamics of solid solutions of polymer and salt", *Polymer Engineering and Science* 52(11) (2012) 2277-2284
- S. Ramesh, Tan Winie and A.K. Arof, "Mechanical studies on poly(vinyl chloride)-poly(methyl methacrylate)-based polymer electrolytes", *Journal of Materials Science* 45 (2010) 1280-1283.
- A.M.M. Ali, R.H.Y. Subban, H. Bahron, Tan Winie, F. Latif, M.Z.A. Yahya. "Grafted Natural Rubber-Based Polymer Electrolytes: ATR-FTIR and Conductivity Studies", *Ionics* 14 (2008) 491-500
- S. Ramesh, Tan Winie and A.K. Arof. "Investigation of mechanical properties of polyvinyl chloride-polyethylene oxide (PVC/PEO) based polymer electrolytes for lithium polymer cells", *European Polymer Journal* 43 (2007) 1963 – 1968
- Tan Winie and A.K. Arof, "FT-IR studies on interactions among components in hexanoyl chitosan-based polymer electrolytes", *Spectrochimica Acta A* 63(3) (2006) 677-684
- Tan Winie and A.K. Arof, "Transport properties of hexanoyl chitosan-based gel electrolyte", *Ionics* 12 (2006) 149-152
- Tan Winie and A.K. Arof, "Hexanoyl chitosan-based gel electrolyte for lithium-ion cell", *Polymers for Advanced Technologies* 17 (2006) 552-555
- Tan Winie, S.R. Majid, A.S.A. Khair and A.K. Arof, "Ionic conductivity of chitosan membrane and application for electrochemical devices", *Polymers for Advanced Technologies* 17 (2006) 523-527