

Curriculum Vitae

Personal Information:

Full Name: Rebar Taeab Abdulwahid
Date of Birth: 10/01/1987
Place of Birth: Sulaymaniyah / Iraq
Nationality: Iraqi
Gender: Male
Address: Physics Department
College of Education
University of Sulaimani
Sulaymaniyah - Iraq



Mobile No.: +9647701468896

Email : rebar.abdulwahid@univsul.edu.iq ; rebertaeb@gmail.com
Google Scholar: <https://scholar.google.com/citations?user=5jOaW7cAAAAJ&hl=en>
Homepage: <http://sites.univsul.edu.iq/rebar-taib/>

Education:

2020: PhD student in Physics Department-University of Sulaimani.

2012: MSc with Distinction in Nanotechnology and Nanoelectronics Devices at Electronics Engineering Department, University of Surrey, Guildford/ United Kingdom.

2008: BSc. in Physics at University of Sulaimani, College of Science, Department of Physics
Stood the 1st out of 24 graduates.

2004: Roshanber preparatory school in Sulaimani, Baccalaureate degree in General Science.

Positions:

10/03/ 2009 to 15/05/2011: Demonstrating undergraduate students in Electricity & Magnetism, Electronics and Optics laboratories in Physics department, College of Science, University of Sulaimani-Iraq.

1/10/2012 to 5/07/2016: Assistant lecturer in Physics department, College of Education, University of Sulaimani, Iraq.

1/08/2016 to present: Lecturer in Physics department, College of Education, University of Sulaimani, Iraq.

Computer and other device skills:

- Windows programs (Microsoft word, Excel, PowerPoint).
- Basic programing by fortran 90.
- Plotting by Matlab.
- Origin lab. Program.
- Working on different devices to grow thin films such as Chemical Vapor Deposition (CVD), laser ablation, dip coating, solution casting and sol-gel technique. In addition, using various

characterization methods like Atomic Force Microscopy (AFM), Scanning Electron Microscope (SEM), cyclic voltammetry (CV), Galvanostatic charge-discharge (GCD), Raman Spectroscopy, X-ray diffraction (XRD), UV-Vis-NIR spectrophotometer, RLC meter, Transference number measurement (TNM), Linear sweep voltammetry, Fourier transform infrared spectroscopy (FTIR).

Communication and Language Skills

Communication, Teamwork and Problem Solving Skills

❖ Communication skills enhanced by giving many presentations as part of my academic courses. My bachelor degree and postgraduate courses allowed me to enhance my team work, analytic and problem solving skills.

Language Skills

❖ Fluent in Kurdish and English, fair in Arabic.

Academic and Teaching Experience:

- Currently I am a part time Lecturer and PhD student in Physics department/ University of Sulaimani.
- Reviewer in many international journals listed in Clarivate Analytic including:
 - Journal of Materials Science: Materials in Electronics
 - Materials Science in Semiconductor Processing
 - Journal of Electroanalytical Chemistry
 - Polymers (ISSN 2073-4360)
 - Materials
 - Nanomaterials
 - SN Applied Sciences
 - Arabian Journal of Chemistry
 - Ceramics International
 - Materials Research Bulletin
 - Molecules
 - Materials Chemistry and Physics
 - Journal of Non-Crystalline Solids
 - Coatings
 - Journal of Semiconductor Technology and Science
 - Polymer (ISSN: 0032-3861)

- **Journal of Energy Storage**
 - **Sustainability**
 - **Materials Today: Proceedings**
 - **Applied Materials Today**
 - **Journal of Polymers and the Environment**
 - **International Journal of Biological Macromolecules**
 - **Optical and Quantum Electronics**
 - **Journal of Inorganic and Organometallic Polymers and Materials**
 - **Journal of Industrial and Engineering Chemistry**
 - **Inorganic Chemistry Communications**
 - **Materials Science and Engineering: B**
 - **Ionics**
 - **Journal of Saudi Chemical Society**
 - **Scientific Reports**
 - **Materials Letters**
 - **Journal of Photochemistry & Photobiology, A: Chemistry**
- **Guest editor in the journal (Membranes) for a special issue "Eco-Friendly Membrane Materials and Technology"**
 - **Eleven years teaching experience of different modules in different universities such as:**
 - **Research Methodology (6 years)**
 - **Electricity and Magnetism (3 years)**
 - **Advanced Electricity (3 years)**
 - **Electronics (5 years)**
 - **Supervising Electricity and Magnetism Laboratory (6 years)**
 - **Demonstrating undergraduate students for two years in Electronics and Optics teaching laboratory in Physics department/University of Sulaimani.**
 - **Attending many conferences, seminars and workshops, such as International conference of Natural Science (2016), MNQ (Material Science, Nanotechnology and Quantum Information) workshop, Modern teaching and research methodology 2 weeks workshop by Lulea University and UNESO in 2014, 2010 and Material Science, Communication and Nuclear Physics workshop 2013 in Sulaymaniyah / Iraq.**
-

Publications:

- [1] S.B. Aziz, R.T. Abdulwahid, H.A. Rsaul, H.M. Ahmed, In situ synthesis of CuS nanoparticle with a distinguishable SPR peak in NIR region, *J. Mater. Sci. Mater. Electron.* 27 (2016) 4163–4171. <https://doi.org/10.1007/s10854-016-4278-y>.
- [2] R.T. Abdulwahid, O.G. Abdullah, S.B. Aziz, S.A. Hussein, F.F. Muhammad, M.Y. Yahya, The study of structural and optical properties of PVA:PbO₂ based solid polymer nanocomposites, *J. Mater. Sci. Mater. Electron.* 27 (2016) 12112–12118. <https://doi.org/10.1007/s10854-016-5363-y>.
- [3] S.B. Aziz, O.G. Abdullah, A.M. Hussein, R.T. Abdulwahid, M.A. Rasheed, H.M. Ahmed, S.W. Abdalqadir, A.R. Mohammed, Optical properties of pure and doped PVA:PEO based solid polymer blend electrolytes: two methods for band gap study, *J. Mater. Sci. Mater. Electron.* 28 (2017) 7473–7479. <https://doi.org/10.1007/s10854-017-6437-1>.
- [4] S.B. Aziz, R.T. Abdulwahid, M.A. Rasheed, O.G.H. Abdullah, H.M. Ahmed, Polymer blending as a novel approach for tuning the SPR peaks of silver nanoparticles, *Polymers (Basel)*. 9 (2017) 486. <https://doi.org/10.3390/polym9100486>.
- [5] P.O. Amin, A.J. Kadhim, M.A. Ameen, R.T. Abdulwahid, Structural and optical properties of thermally annealed TiO₂–SiO₂ binary thin films synthesized by sol–gel method, *J. Mater. Sci. Mater. Electron.* 29 (2018) 16010–16020. <https://doi.org/10.1007/s10854-018-9688-6>.
- [6] S.B. Aziz, R.T. Abdulwahid, M.H. Hamsan, M.A. Brza, R.M. Abdullah, M.F.Z. Kadir, S.K. Muzakir, Structural, impedance, and EDLC characteristics of proton conducting chitosan-based polymer blend electrolytes with high electrochemical stability, *Molecules*. 24 (2019). <https://doi.org/10.3390/molecules24193508>.
- [7] S.B. Aziz, W.O. Karim, M.A. Brza, R.T. Abdulwahid, S.R. Saeed, S. Al-Zangana, M.F.Z. Kadir, Ion transport study in CS: POZ based polymer membrane electrolytes using Trukhan model, *Int. J. Mol. Sci.* 20 (2019). <https://doi.org/10.3390/ijms20215265>.
- [8] S.B. Aziz, M.A. Brza, P.A. Mohamed, M.F.Z. Kadir, M.H. Hamsan, R.T. Abdulwahid, H.J. Woo, Increase of metallic silver nanoparticles in Chitosan:AgNt based polymer electrolytes incorporated with alumina filler, *Results Phys.* 13 (2019) 102326. <https://doi.org/10.1016/j.rinp.2019.102326>.
- [9] S.B. Aziz, G. Hussein, M.A. Brza, S.J. Mohammed, R.T. Abdulwahid, S.R. Saeed, A. Hassanzadeh, Fabrication of interconnected plasmonic spherical silver nanoparticles with enhanced localized surface plasmon resonance (Lspr) peaks using quince leaf extract solution, *Nanomaterials*. 9 (2019). <https://doi.org/10.3390/nano9111557>.
- [10] S.B. Aziz, M.H. Hamsan, M.A. Brza, M.F.Z. Kadir, R.T. Abdulwahid, H.O. Ghareeb, H.J. Woo, Fabrication of energy storage EDLC device based on CS:PEO polymer blend electrolytes with high Li⁺ ion transference number, *Results Phys.* 15 (2019) 102584. <https://doi.org/10.1016/j.rinp.2019.102584>.

- [11] S.B. Aziz, S. Al-Zangana, M.A. Brza, S.R. Saeed, R.T. Abdulwahid, M.F.Z. Kadir, Study of dielectric properties and ion transport parameters in Chitosan-Barium Nitrate based solid polymer electrolytes, *Int. J. Electrochem. Sci.* 14 (2019) 11580–11595. <https://doi.org/10.20964/2019.12.39>.
- [12] D.S. Muhammed, M.A. Brza, M.M. Nofal, S.B. Aziz, S.A. Hussien, R.T. Abdulwahid, Optical dielectric loss as a novel approach to specify the types of electron transition: XRD and UV-vis as a non-destructive techniques for structural and optical characterization of PEO based nanocomposites, *Materials (Basel)*. 13 (2020) 2979. <https://doi.org/10.3390/ma13132979>.
- [13] S.B. Aziz, M.A. Brza, M.M. Nofal, R.T. Abdulwahid, S.A. Hussien, A.M. Hussein, W.O. Karim, A comprehensive review on optical properties of polymer electrolytes and composites, *Materials (Basel)*. 13 (2020) 3675. <https://doi.org/10.3390/MA13173675>.
- [14] S.B. Aziz, M.A. Brza, E.M.A. Dannoun, M.H. Hamsan, J.M. Hadi, M.F.Z. Kadir, R.T. Abdulwahid, The Study of Electrical and Electrochemical Properties of Magnesium Ion Conducting CS: PVA Based Polymer Blend Electrolytes: Role of Lattice Energy of Magnesium Salts on EDLC Performance, *Molecules*. 25 (2020) 4503. <https://doi.org/10.3390/molecules25194503>.
- [15] M.M. Nofal, S.B. Aziz, J.M. Hadi, R.T. Abdulwahid, E.M.A. Dannoun, A.S. Marif, S. Al-Zangana, Q. Zafar, M.A. Brza, M.F.Z. Kadir, Synthesis of porous proton ion conducting solid polymer blend electrolytes based on PVA: CS polymers: Structural, morphological and electrochemical properties, *Materials (Basel)*. 13 (2020) 4890. <https://doi.org/10.3390/ma13214890>.
- [16] S.B. Aziz, I. Brevik, M.A. Brza, A.S.F.M. Asnawi, E.M.A. Dannoun, Y.M. Yusof, R.T. Abdulwahid, M.H. Hamsan, M.M. Nofal, M.F.Z. Kadir, The study of structural, impedance and energy storage behavior of plasticized pva:Mc based proton conducting polymer blend electrolytes, *Materials (Basel)*. 13 (2020) 5030. <https://doi.org/10.3390/ma13215030>.
- [17] S.B. Aziz, M.H. Hamsan, R.M. Abdullah, R.T. Abdulwahid, M.A. Brza, A.S. Marif, M.F.Z. Kadir, Protonic EDLC cell based on chitosan (CS): methylcellulose (MC) solid polymer blend electrolytes, *Ionics (Kiel)*. 26 (2020) 1829–1840. <https://doi.org/10.1007/s11581-020-03498-5>.
- [18] S.B. Aziz, M.A. Brza, K. Mishra, M.H. Hamsan, W.O. Karim, R.M. Abdullah, M.F.Z. Kadir, R.T. Abdulwahid, Fabrication of high performance energy storage EDLC device from proton conducting methylcellulose: Dextran polymer blend electrolytes, *J. Mater. Res. Technol.* 9 (2020) 1137–1150. <https://doi.org/10.1016/j.jmrt.2019.11.042>.
- [19] S.B. Aziz, M.A. Brza, M.H. Hamsan, M.F.Z. Kadir, S.K. Muzakir, R.T. Abdulwahid, Effect of ohmic-drop on electrochemical performance of EDLC fabricated from PVA: Dextran: NH4I based polymer blend electrolytes, *J. Mater. Res. Technol.* 9 (2020) 3734–3745. <https://doi.org/10.1016/j.jmrt.2020.01.110>.
- [20] A.S.F.M. Asnawi, S.B. Aziz, M.M. Nofal, Y.M. Yusof, I. Brevik, M.H. Hamsan, M.A. Brza, R.T. Abdulwahid, M.F.Z. Kadir, Metal complex as a novel approach to enhance the amorphous phase and improve the EDLC performance of plasticized proton conducting chitosan-based polymer electrolyte, *Membranes (Basel)*. 10 (2020) 1–20. <https://doi.org/10.3390/membranes10060132>.

- [21] S.B. Aziz, M.H. Hamsan, M.M. Nofal, W.O. Karim, I. Brevik, M.A. Brza, R.T. Abdulwahid, S. Al-Zangana, M.F.Z. Kadir, Structural, Impedance and Electrochemical Characteristics of Electrical Double Layer Capacitor Devices Based on Chitosan: Dextran Biopolymer Blend Electrolytes, *Polymer (Guildf)*. 12 (2020) 1411. <https://doi.org/https://doi.org/10.3390/polym12061411>.
- [22] A.S.F.M. Asnawi, S.B. Aziz, M.M. Nofal, M.H. Hamsan, M.A. Brza, Y.M. Yusof, R.T. Abdulwahid, S.K. Muzakir, M.F.Z. Kadir, Glycerolized Li⁺ ion conducting chitosan-based polymer electrolyte for energy storage EDLC device applications with relatively high energy density, *Polymers (Basel)*. 12 (2020) 1–19. <https://doi.org/10.3390/polym12061433>.
- [23] S.B. Aziz, M.A. Brza, H.M. Hamsan, M.F.Z. Kadir, R.T. Abdulwahid, Electrochemical characteristics of solid state double - layer capacitor constructed from proton conducting chitosan - based polymer blend electrolytes, *Polym. Bull.* (2020). <https://doi.org/10.1007/s00289-020-03278-1>.
- [24] S. B. Aziz, M.H.Hamsan, M.A.Brza, M.F.Z.Kadir, S.K.Muzakir, R.T.Abdulwahid, Effect of glycerol on EDLC characteristics of chitosan : methylcellulose polymer blend electrolytes, *J. Mater. Res. Technol.* 9 (2020) 8355–8366. <https://doi.org/10.1016/j.jmrt.2020.05.114>.
- [25] J.M. Hadi, S.B. Aziz, M.S. Mustafa, M.H. Hamsan, R.T. Abdulwahid, M.F.Z. Kadir, H.O. Ghareeb, Role of nano-capacitor on dielectric constant enhancement in PEO:NH₄SCN:xCeO₂ polymer nano-composites: Electrical and electrochemical properties, *J. Mater. Res. Technol.* 9 (2020) 9283–9294. <https://doi.org/10.1016/j.jmrt.2020.06.022>.
- [26] S. B. Aziz, M. H. Hamsan, M. M. Nofal, S. San, R.T. Abdulwahid, S.R. Raza Saeed, M.A. Brza, M.F.Z. Kadir, S.J. Mohammed, S. Al-Zangana, From Cellulose, Shrimp and Crab Shells to Energy Storage EDLC Cells: The Study of Structural and Electrochemical Properties of Proton Conducting Chitosan-Based Biopolymer Blend Electrolytes, *Polymers (Basel)*. 12 (2020) 1526. <https://doi.org/10.3390/polym12071526>.
- [27] J.M. Hadi, S.B. Aziz, M.M. Nofal, S.A. Hussen, M.H. Hamsan, M.A. Brza, R.T. Abdulwahid, M.F.Z. Kadir, H.J. Woo, Electrical, dielectric property and electrochemical performances of plasticized silver ion-conducting chitosan-based polymer nanocomposites, *Membranes (Basel)*. 10 (2020) 1–22. <https://doi.org/10.3390/membranes10070151>.
- [28] S.B. Aziz, M.H. Hamsan, W.O. Karim, A.S. Marif, R.T. Abdulwahid, M.F.Z. Kadir, M.A. Brza, Study of impedance and solid-state double-layer capacitor behavior of proton (H⁺)-conducting polymer blend electrolyte-based CS:PS polymers, *Ionics (Kiel)*. 26 (2020) 4635–4649. <https://doi.org/10.1007/s11581-020-03578-6>.
- [29] M.H.Hamsan, S.B. Aziz, M. M.Nofal, M.A.Brza, R.T. Abdulwahid, J.M. Hadi, W.O. Karim, M.F.Z.Kadir, Characteristics of EDLC device fabricated from plasticized chitosan : MgCl₂ based polymer electrolyte, *J. Mater. Res. Technol.* 9 (2020) 10635–10646. <https://doi.org/10.1016/j.jmrt.2020.07.096>.
- [30] M.A. Brza, S.B. Aziz, M.M. Nofal, S.R. Saeed, S. Al-Zangana, W.O. Karim, S.A. Hussen, R.T. Abdulwahid, M.F.Z. Kadir, Drawbacks of Low Lattice Energy Ammonium Salts for Ion-Conducting Polymer Electrolyte Preparation: Structural, Morphological and Electrical Characteristics of CS:PEO:NH₄BF₄-Based Polymer Blend Electrolytes, *Polymer (Guildf)*. 12 (2020) 1885. <https://doi.org/10.3390/polym12091885>.

- [31] M.A. Brza, S.B. Aziz, H. Anuar, E.M.A. Dannoun, F. Ali, R.T. Abdulwahid, S. Al-Zangana, M.F.Z. Kadir, The study of EDLC device with high electrochemical performance fabricated from proton ion conducting PVA-based polymer composite electrolytes plasticized with glycerol, *Polymers (Basel)*. 12 (2020) 1896. <https://doi.org/10.3390/POLYM12091896>.
- [32] S.B. Aziz, J.M. Hadi, E.M. Elham, R.T. Abdulwahid, S.R. Saeed, A.S. Marf, W.O. Karim, M.F.Z. Kadir, The study of plasticized amorphous biopolymer blend electrolytes based on polyvinyl alcohol (PVA): Chitosan with high ion conductivity for energy storage electrical double-layer capacitors (EDLC) device application, *Polymers (Basel)*. 12 (2020) 1938. <https://doi.org/10.3390/POLYM12091938>.
- [33] S. B. Aziz, M.A. Brza, I. Brevik, M.H. Hafiz, A.S.F.M. Asnawi, Y.M. Yusof, R.T. Abdulwahid, M.F.Z. Kadir, Blending and Characteristics of Electrochemical Double-Layer Capacitor Device Assembled from Plasticized Proton Ion Conducting Chitosan:Dextran:NH4PF6 Polymer Electrolytes, *Polymers (Basel)*. 12 (2020) 2103. <https://doi.org/10.3390/polym12092103>.
- [34] M.A. Brza, S.B. Aziz, H. Anuar, F. Ali, M.H. Hamsan, M.F.Z. Kadir, R.T. Abdulwahid, Metal framework as a novel approach for the fabrication of electric double layer capacitor device with high energy density using plasticized Poly(vinyl alcohol): Ammonium thiocyanate based polymer electrolyte, *Arab. J. Chem.* 13 (2020) 7247–7263. <https://doi.org/10.1016/j.arabjc.2020.08.006>.
- [35] A.M. Hussein, E.M.A. Dannoun, S.B. Aziz, M.A. Brza, R.T. Abdulwahid, S.A. Hussien, S. Rostam, D.M.T. Mustafa, D.S. Muhammad, Steps toward the band gap identification in polystyrene based solid polymer nanocomposites integrated with tin titanate nanoparticles, *Polymers (Basel)*. 12 (2020) 2320. <https://doi.org/10.3390/polym12102320>.
- [36] M.A. Brza, S.B. Aziz, H. Anuar, F. Ali, E.M.A. Dannoun, S.J. Mohammed, R.T. Abdulwahid, S. Al-Zangana, Tea from the drinking to the synthesis of metal complexes and fabrication of PVA based polymer composites with controlled optical band gap, *Sci. Rep.* 10 (2020) 1–17. <https://doi.org/10.1038/s41598-020-75138-x>.
- [37] S.B. Aziz, M.A. Brza, I. Brevik, M.H. Hamsan, R.T. Abdulwahid, S.R. Majid, M.F.Z. Kadir, S.A. Hussien, R.M. Abdullah, Characteristics of glycerolized chitosan: NH₄NO₃-based polymer electrolyte for energy storage devices with extremely high specific capacitance and energy density over 1000 cycles, *Polymers (Basel)*. 12 (2020) 2718. <https://doi.org/10.3390/polym12112718>.
- [38] J.M. Hadi, S.B. Aziz, S.R. Saeed, M.A. Brza, R.T. Abdulwahid, M.H. Hamsan, R.M. Abdullah, M.F.Z. Kadir, S.K. Muzakir, Investigation of ion transport parameters and electrochemical performance of plasticized biocompatible chitosan-based proton conducting polymer composite electrolytes, *Membranes (Basel)*. 10 (2020) 363. <https://doi.org/10.3390/membranes10110363>.
- [39] A.R. Murad, A. Iraqi, S.B. Aziz, S.N. Abdullah, R.T. Abdulwahid, S.A. Hussien, Optical, Electrochemical, Thermal, and Structural Properties of Synthesized Fluorene/Dibenzosilole-Benzothiadiazole Dicarboxylic Imide Alternating Organic Copolymers for Photovoltaic Applications, *Coatings*. 10 (2020) 1147. <https://doi.org/10.3390/coatings10121147>.
- [40] A.R. Murad, A. Iraqi, S.B. Aziz, S.N. Abdullah, R.T. Abdulwahid, Synthesis, optical, thermal and structural characteristics of novel thermocleavable polymers based on phthalate esters, *Polymers (Basel)*. 12 (2020) 2791. <https://doi.org/10.3390/polym12122791>.

- [41] A.S.F.M. Asnawi, S.B. Aziz, S.R. Saeed, Y.M. Yusof, R.T. Abdulwahid, S. Al-Zangana, W.O. Karim, M.F.Z. Kadir, Solid-state EDLC device based on magnesium ion-conducting biopolymer composite membrane electrolytes: Impedance, circuit modeling, dielectric properties and electrochemical characteristics, *Membranes (Basel)*. 10 (2020) 389. <https://doi.org/10.3390/membranes10120389>.
- [42] M. Brza, S.B. Aziz, S.R. Saeed, M.H. Hamsan, S.R. Majid, R.T. Abdulwahid, M.F.Z. Kadir, R.M. Abdullah, Energy storage behavior of lithium-ion conducting poly(Vinyl alcohol) (PVA): Chitosan(CS)-based polymer blend electrolyte membranes: Preparation, equivalent circuit modeling, ion transport parameters, and dielectric properties, *Membranes (Basel)*. 10 (2020) 381. <https://doi.org/10.3390/membranes10120381>.
- [43] A.R. Murad, A. Iraqi, S.B. Aziz, H. Hi, S.N. Abdullah, M.A. Brza, R.T. Abdulwahid, Influence of fluorine substitution on the optical, thermal, electrochemical and structural properties of carbazole-benzothiadiazole dicarboxylic imide alternate copolymers, *Polymers (Basel)*. 12 (2020) 2910. <https://doi.org/10.3390/polym12122910>.
- [44] A.R. Murad, A. Iraqi, S.B. Aziz, S.N. Abdullah, M.A. Brza, S.R. Saeed, R.T. Abdulwahid, Fabrication of Alternating Copolymers Based on Cyclopentadithiophene-Benzothiadiazole Dicarboxylic Imide with Reduced Optical Band Gap: Synthesis, Optical, Electrochemical, Thermal, and Structural Properties, *Polymers (Basel)*. 13 (2021) 63. <https://doi.org/10.3390/polym13010063>.
- [45] S.B. Aziz, M.M. Nofal, R.T. Abdulwahid, H.O. Ghareeb, E.M.A. Dannoun, R.M. Abdullah, M.H. Hamsan, M.F.Z. Kadir, Plasticized Sodium-Ion Conducting PVA Based Polymer Electrolyte for Electrochemical Energy Storage — EEC Modeling , Transport Properties , and Charge-Discharge Characteristics, *Polymer (Guildf)*. 13 (2021) 803. <https://doi.org/10.3390/polym13050803>.
- [46] S.B. Aziz, E.M.A. Dannoun, D.A. Tahir, S.A. Hussien, R.T. Abdulwahid, M.M. Nofal, R.M. Abdullah, A.M. Hussein, I. Brevik, Synthesis of pva/ceo2 based nanocomposites with tuned refractive index and reduced absorption edge: Structural and optical studies, *Materials (Basel)*. 14 (2021) 1570. <https://doi.org/10.3390/ma14061570>.
- [47] S.B. Aziz, E.M.A. Dannoun, M.H. Hamsan, R.T. Abdulwahid, K. Mishra, M.M. Nofal, M.F.Z. Kadir, Improving EDLC Device Performance Constructed from Plasticized Magnesium Ion Conducting Chitosan Based Polymer Electrolytes via Metal Complex Dispersion, *Membranes (Basel)*. 11 (2021) 289. <https://doi.org/10.3390/membranes11040289>.
- [48] M.A. Brza, S.B. Aziz, H. Anuar, F. Ali, E.M.A. Dannoun, S.R. Saeed, S.J. Mohammed, R.T. Abdulwahid, Green coordination chemistry as a novel approach to fabricate polymer:Cd(II)-complex composites: Structural and optical properties, *Opt. Mater. (Amst)*. 116 (2021) 111062. <https://doi.org/10.1016/j.optmat.2021.111062>.
- [49] M. A. Brza, S.B. Aziz, H. Anuar, F. Ali, R.T. Abdulwahid, J.M. Hadi, Electrochemical Impedance Spectroscopy as a Novel Approach to Investigate the Influence of Metal Complexes on Electrical Properties of Poly(vinyl alcohol) (PVA) Composites, *Int. J. Electrochem. Sci*. 16 (2021) 210542. <https://doi.org/10.20964/2021.05.22>.
- [50] R.T. Abdulwahid, S.B. Aziz, M.A. Brza, M.F.Z. Kadir, Electrochemical performance of polymer blend electrolytes based on chitosan : dextran : impedance , dielectric properties , and

energy storage study, *J. Mater. Sci. Mater. Electron.* 32 (2021) 14846–14862. <https://doi.org/10.1007/s10854-021-06038-7>.

[51] K.A. Abdalkarim, S.B. Aziz, R.T. Abdulwahid, S.M. Alshehri, T. Ahamad, J.M. Hadi, S.A. Hussein, Synthesis of Hg metal complex and its application to reduce the optical band gap of polymer, *Arab. J. Chem.* 14 (2021) 103215. <https://doi.org/10.1016/j.arabjc.2021.103215>.

[52] S.B. Aziz, A.S.F.M. Asnawi, R.T. Abdulwahid, H.O. Ghareeb, S.M. Alshehri, T. Ahamad, J.M. Hadi, M.F.Z. Kadir, Design of potassium ion conducting PVA based polymer electrolyte with improved ion transport properties for EDLC device application, *J. Mater. Res. Technol.* 13 (2021) 933–946. <https://doi.org/10.1016/j.jmrt.2021.05.017>.

[53] S.B. Aziz, A.S.F.M. Asnawi, P.A. Mohammed, R.T. Abdulwahid, Y.M. Yusof, R.M. Abdullah, M.F.Z. Kadir, Impedance, circuit simulation, transport properties and energy storage behavior of plasticized lithium ion conducting chitosan based polymer electrolytes, *Polym. Test.* 101 (2021) 107286. <https://doi.org/10.1016/j.polymertesting.2021.107286>.

[54] A.G.S. Al-azzawi, S.B. Aziz, A. Iraqi, A.R. Murad, R.T. Abdulwahid, S.M. Alshehri, T. Ahamad, Impact of ethynylene linkers on the optical and electrochemical properties of benzothiadiazole based alternate conjugated polymers, *Arab. J. Chem.* 14 (2021) 103320. <https://doi.org/10.1016/j.arabjc.2021.103320>.

[55] S.B. Aziz, M.M. Nofal, R.T. Abdulwahid, M. F. Z. Kadir, J.M. Hadi, M.M. Hussien, W.O. Kareem, E.M.A. Dannoun, S.R. Saeed, Impedance, FTIR and Transport Properties of Plasticized Proton Conducting Biopolymer Electrolyte Based on Chitosan for Electrochemical Device Application, *Results Phys.* 29 (2021) 104770. <https://doi.org/10.1016/j.rinp.2021.104770>.

[56] S.B. Aziz, R.T. Abdulwahid, M.F.Z. Kadir, H.O. Ghareeb, T. Ahamad, S.M. Alshehri, Design of non-faradaic EDLC from plasticized MC based polymer electrolyte with an energy density close to lead-acid batteries, *J. Ind. Eng. Chem.* 105 (2021) 414–426. <https://doi.org/10.1016/j.jiec.2021.09.042>.

[57] S.B. Aziz, E.M.A. Dannoun, R.T. Abdulwahid, M.F.Z. Kadir, M.M. Nofal, S.I. Al-Saeedi, A.R. Murad, The Study of Ion Transport Parameters in MC-Based Electrolyte Membranes Using EIS and Their Applications for EDLC Devices, *Membranes (Basel)*. 12 (2022) 139. <https://doi.org/10.3390/membranes12020139>.

[58] E.M.A. Dannoun, S.B. Aziz, M.F.Z. Kadir, M.A. Brza, M.M. Nofal, J.M. Hadi, S.I. Al-Saeedi, R.T. Abdulwahid, The study of impedance, ion transport properties, EEC modeling, dielectric and electrochemical characteristics of plasticized proton conducting PVA based electrolytes, *J. Mater. Res. Technol.* 17 (2022) 1976–1985. <https://doi.org/10.1016/j.jmrt.2022.01.152>.

[59] J.M. Hadi, S.B. Aziz, M.A. Brza, M.F.Z. Kadir, R.T. Abdulwahid, B. Ali Al-Asbahi, A. Ahmed Ali Ahmed, Structural and energy storage behavior of ion conducting biopolymer blend electrolytes based on methylcellulose: Dextran polymers, *Alexandria Eng. J.* 61 (2022) 9273–9285. <https://doi.org/10.1016/j.aej.2022.03.042>.

[60] H.G. Rauf, J.M. Hadi, S.B. Aziz, R.T. Abdulwahid, M.S. Mustafa, A Novel Approach to Design High Resistive Polymer Electrolytes Based on PVC: Electrochemical Impedance and Dielectric Properties, *Int. J. Electrochem. Sci.* (2022) 22051 <https://doi.org/10.20964/2022.05.04>.

[61] R.T. Abdulwahid, S.B. Aziz, M.F.Z. Kadir, Insights into ion transport in biodegradable solid polymer blend electrolyte based on FTIR analysis and circuit design, *J. Phys. Chem. Solids*. 167 (2022) 110774. <https://doi.org/10.1016/j.jpics.2022.110774>.

- [62] R.T. Abdulwahid, S.B. Aziz, M.F.Z. Kadir, Design of proton conducting solid biopolymer blend electrolytes based on chitosan-potato starch biopolymers : Deep approaches to structural and ion relaxation dynamics of H + ion, *J. Appl. Polym. Sci.* e52892 (2022). <https://doi.org/10.1002/app.52892>.
- [63] E.M.A. Dannoun, S.B. Aziz, R.T. Abdulwahid, S.I. Al-saeedi, M.M. Nofal, N.M. Sadiq, J.M. Hadi, Study of MC:DN-Based Biopolymer Blend Electrolytes with Inserted Zn-Metal Complex for Energy Storage Devices with Improved Electrochemical Performance, *Membranes (Basel)*. 12 (2022) 769. <https://doi.org/10.3390/membranes12080769>.
- [64] S.B. Aziz, E.M.A. Dannoun, A.A. Abdalrahman, R.T. Abdulwahid, S.I. Al-saeedi, M.A. Brza, M.M. Nofal, R.M. Abdullah, J.M. Hadi, W.O. Karim, Characteristics of Methyl Cellulose Based Solid Polymer Electrolyte Inserted with Potassium Thiocyanate as K⁺ Cation Provider : Structural and Electrical Studies, *Materials (Basel)*. 15 (2022) 5579. <https://doi.org/10.3390/ma15165579>.
- [65] S.B. Aziz, E.M.A. Dannoun, A.A. Abdalrahman, R.T. Abdulwahid, S.I. Al-saeedi, M.A. Brza, M.M. Nofal, R.M. Abdullah, J.M. Hadi, W.O. Karim, Characteristics of Methyl Cellulose Based Solid Polymer Electrolyte Inserted with Potassium Thiocyanate as K⁺ Cation Provider : Structural and Electrical Studies, *Materials (Basel)*. 15 (2022) 5579. <https://doi.org/10.3390/ma15165579>.
- [66] R.T. Abdulwahid, S.B. Aziz, M.F.Z. Kadir, N.M. Sadiq, N.A. Halim, M.H. Hamsan, S.R. Saeed, H.J. Woo, Biodegradable polymer membrane K + ion conductor for electrochemical device application, *J. Mater. Sci.* (2022). <https://doi.org/10.1007/s10853-022-07825-1>.
- [67] K.K. Ahmed, S.B. Aziz, R.T. Abdulwahid, S.A. Hussen, M.A. Brza, Green synthesized Al-metal complex to reduce the crystalline phase and improve the optical properties of CS based polymer blends, *Opt. Mater. (Amst)*. 134 (2022) 113112. <https://doi.org/10.1016/j.optmat.2022.113112>.
- [68] M.A. Brza, S.B. Aziz, R.T. Abdulwahid, H.B. Tahir, M.F.Z. Kadir, Ion transport and electrochemical properties of proton conducting SPE for EDLC with constant specific capacitance and energy density, *J. Ind. Eng. Chem.* 120 (2023) 495–503. <https://doi.org/10.1016/j.jiec.2023.01.001>.
- [69] R.T. Abdulwahid, S.B. Aziz, M.F.Z. Kadir, Environmentally friendly plasticized electrolyte based on chitosan (CS): Potato starch (PS) polymers for EDLC application: Steps toward the greener energy storage devices derived from biopolymers, *J. Energy Storage*. 67 (2023) 107636. <https://doi.org/10.1016/j.est.2023.107636>.
- [70] S.I. Al-Saeedi, S.B. Aziz, J.M. Hadi, P.O. Hama, R.T. Abdulwahid, A.A. Abdalrahman, A.R. Murad, W.O. Karim, N. Abdul Halim, M. Fakhrul Zamani Kadir, S.M. Hamad, Green biopolymer and plasticizer for solid electrolyte preparation: FTIR, electrochemical properties and EDLC characteristics, *Arab. J. Chem.* 16 (2023) 105046. <https://doi.org/10.1016/j.arabjc.2023.105046>.
- [71] S.B. Aziz, R.T. Abdulwahid, N.M. Sadiq, R.M. Abdullah, D.A. Tahir, D.A. Jameel, S.M. Hamad, O.G. Abdullah, Design of Biodegradable Polymer Blend Electrolytes with Decoupled Ion Motion for EDLC Device Application: Electrical and Electrochemical Properties, *Results Phys.* 51 (2023) 106692. <https://doi.org/10.1016/j.rinp.2023.106692>.
- [72] S.B. Aziz, R.T. Abdulwahid, M.A. Brza, M.B. Ahmed, A.R. Murad, H.B. Tahir, R.M. Abdullah, J.M. Hadi, S.A. Hussen, Exploring the sustainable frontier by investigating structural, electrochemical and ion transport properties of potassium salt-doped PVA-based polymer electrolyte for supercapacitor application, *J. Energy Storage*. 71 (2023) 108175. <https://doi.org/10.1016/j.est.2023.108175>.
- [73] R.T. Abdulwahid, S.B. Aziz, M.F.Z. Kadir, Replacing Synthetic Polymer electrolytes in Energy Storage with Flexible Biodegradable Alternatives: Sustainable Green Biopolymer Blend Electrolyte for Supercapacitor Device, *Materials Today Sustainability*. 23 (2023) 100472. <https://doi.org/10.1016/j.mtsust.2023.100472>.

Interested Field of Study:

Besides my interest to teaching in academic establishment, I am interested in scientific research, in general all the applications of nanotechnology and materials science in the field of electronics. Specially, applications of nanomaterials and polymers composites such as nanoparticles, nanowire semiconductor, polymer electrolytes and organic materials in electronic devices and renewable energy systems.

References:

Dr. Shujahadeen B. Aziz

(PhD personal supervisor)

Professor

Department of Physics

College of Science

University of Sulaimani

Email:

shujahadeenaziz@gmail.com

Tel: +9647511711435

Dr. Omed Ghareb Abdullah

Professor

Department of Physics

College of Science

University of Sulaimani

Email:

omed.abdullah@univsul.edu.iq

Tel: +9647702400280

Dr. Vlad Stolojan

(MSc personal supervisor)

Department of Electronic

Engineering

Faculty of Engineering and

Physical Sciences

University of Surrey

GU2 7XH

Email: v.stolojan@surrey.ac.uk

Phone : +447949209316

Work Tel: 01483 68 9411