Curriculum Viate

Dr. Eslam Sheha

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Eslam Sheha was awarded his PhD degree in Materials Science from the Benha University 2007. He has made significant achievements in winning Young Research Grant (2069) and Research Support Grant (4758)&(12564) from the STDF. His work extends to synthesis and develops nanomaterials electrodes for magnesium ion batteries. His research center is on ionic conduction in solid, with the twin objectives of understanding the mechanisms that govern ion transport, and applying such an understanding to the development of advanced solid electrolytes and novel solid-state electrochemical devices with particular focus on energy technologies. He aim establishing a new class of magnesium cells based on non-traditional materials and demonstrated record power densities for these cells. His more recent and future work on electrolyte and cathode for magnesium battery will create new avenues to meet energy demands. Characterization tools range from A.C. impedance spectroscopy in a variety of configurations to x-ray, electrochemical and thermal analysis. Several publications in an international peer-reviewed journal have been accomplished by him and in cooperation with other national and international experts.

Research Interests:

- Ionic conductive polymer for energy conversion and storage devices.
- Solid acid membrane
- Fuel cell
- Rechargeable magnesium battery

Current Position

- 06/2017~ now Professor at Physics department, Benha University, Egypt

Educational Background

- Ph.D. (12/2003-05/2007) Material Science and Engineering, Physics department, Benha University.
  Research: Composite polymer electrolyte for nickel metal hydride batteries
- M.Sc. (03/2001-05/2003) Material Science and Engineering, Physics department, Benha University.
  Research: Structure, acoustical, optical and electrical properties of $KHCO_3$ crystal
- B.E (09/1994-07/1999) Physics department, Benha University, Egypt

Awards

- 8/2010 "Young Research Grant" Issued by Science and Technology Development Fund STDF.(ID:2069) "Magnesium battery based in solid acid membrane"
- 4/2013 " Research Support Grant" Issued by Science and Technology Development Fund STDF.(ID:4758) "Preparation and Characterization of Nanostructure Titanium Dioxide/ Graphene Modified Electrodes for Rechargeable Magnesium Battery"
- 2/2015 " Research Support Grant" Issued by Science and Technology Development Fund STDF.(ID:12564) " Novel Composite Membranes for High Performance Rechargeable Mg Batteries"
- 12/2016 Research Support Grant " Issued by Benha University (Science Research Fund(ID:1076)) " Evaluation the effect of sulfur doping on the physical and electrochemical properties of V_2O_5 cathode for magnesium battery"

Visiting Fellow

- **2016 Visiting fellow to UNSW University, Australia (School of Chemistry) Attention Dr. Neeraj Sharma. (30 days)**
- **2015 Visiting fellow to Wollongong University, Australia (Institute for Superconducting & Electronic Materials) Attention Prof. Zaiping Guo. (30 days)**
- **2012 Visiting fellow to University of Science and Technology Beijing, Beijing, China Attention: Prof. lizhen Fan (8 days)**
- **2011 Visiting fellow to Wollongong University, Australia (Institute for Superconducting & Electronic Materials) Attention Prof. Zaiping Guo. (15 days)**
- **2010 Visiting fellow to Caltech (Steele Lab) Attention Prof. Sossina Haile (8 days)**

Conferences/Workshops

- **2018, 2nd International symposium on Magnesium Batteries, Helmholtz-Institute Ulm (HIU), Germany, 27-28 Sep. 2018**
- **2018, Energy Future Conference, UNSW Sydney, Australia from 5 – 7 February 2018**
- **2016, INTERNATIONAL SYMPOSIUM ON NEXT-GENERATION BATTERIES 9th to 14th August 2016 Innovation Campus, North Wollongong, NSW Australia**
- **Eg-MRS 6-9 Jan 2016 , Aswan, Egypt**
- **2014, Energy Materials Nanotechnology (EMN) Fall Meeting 2014" Orlando, Florida. 22 - November 25, 2014.**
- **2014, Asia Pacific Conference on Electrochemical Energy Storage and**

Conversion (APEnergy2014), Brisbane, Australia.

- **2012, Batteries &Fuel cells Seminar, September 4-6-2012 San Diego CA-USA**
- **2012, Proceeding Cleantech, Santa Clara Convention Center. Santa Clara, California, U.S.A.**
- **Eg-MRS 2011 , Sharm El-Shikh 3-6 Oct.2011, Egypt**
- **Guidelines for researcher workshop 2010",Bibliotheca Alexandrina**
- **2008, Material Science courses development "Physics department, Sohag University**

Publications

[1]. *Magnesium hexakis (methanol)-dinitrate complex electrolyte for use in rechargeable magnesium batteries, E Sheha, M El-Deftar, Journal of Solid State Electrochemistry,* 2018, Volume 22, *Issue 9*, pp 2671–2679.

[2]. *Graphene and magnesiated graphene as electrodes for magnesium ion batteries, Medhat Mesallam, E. Sheha, , Neeraj Sharma,* Materials Letters 232 (2018) 103–106

[3]. *SmFeO3 and Bi-doped SmFeO3 perovskites as an alternative class of electrodes in lithium-ion batteriesJ Liu, E Sheha, SI El-dek, D Goonetilleke, M Harguindeguy, N Sharma, CrystEngComm, 2018, DOI: 10.1039/C8CE00780B.*

[4]. *Attempt to tune the dielectric and optical properties in PVA/ZnO composite using tetra ethylene glycol dimethyl ether for light emitting devices, Applied Physics A, 2018, Applied Physics A 124 (8), 549.*

[5]. *Evaluate the Effect of Super P Carbon Black on Tuning the Optical and Photometric Properties of PVA-ZnO Composite,O Elkalashy, E Sheha, R Khalil, E Elmoghazy,Journal of Nanoelectronics and Optoelectronics 13 (3), 349-356*

[6]. *The electrical and electrochemical properties of graphene nanoplatelets modified 75V2O5–25P2O5 glass as a promising anode material for lithium ion batteryMA Kebede, N Palaniyandy, RM Ramadan, E Sheh, Journal of Alloys and Compounds 2018, 735, 445-453*

[7]. *Green synthesis of Co3O4/graphene nanocomposite as cathode for magnesium batteries, EM Kamar, E Sheha, Materials Science-Poland 2017, 35 (3), 528-533*

[8]. *Evaluation the Effect of Graphene Nanoplatelets on the Structure, Electrical and Thermoelectric Propertiesof Polyvinyl Alcohol, M. Morad, M. A. Hassan, M. M. Fadlallah, and E. Sheha J. Adv. Phys. 6(2), (2017) 177–186.*

[9]. *Investigation of Electrical Properties, Structure and Morphological Characterization of Mg^{+2} Ions Conducting Solid Polymer Electrolyte Based on Poly(vinyl alcohol), Reda Khalil, E. Sheha, Alaa Eid, Journal of Advanced Physics, J. Adv. Phys. 6 (1) (2017)* 102-107.

[10]. *Electrical and electrochemical properties of titanium dioxide/graphene nano platelets cathode for magnesium battery applications MH Makled, YM Arabi, E Sheha, S Arfa, IS Yahia, F Salman Ciência & Tecnologia dos Materiais 28 (2), 2016, 117-123*

[11]. *Effect of Magnesium Bromide on the Electrical and Electrochemical Properties of PVA and Tetraethylene Glycol Dimethyl Ether Polymer Electrolyte for Solid State Magnesium Batteries,E Sheha, F Ahmad, P Zhang, H Wang, Z Guo, Energy and Environment Focus 2016, 5 (2), 125-130.*

[12]. *Evaluation of the effect of V_2O_5 on the electrical and thermoelectric properties of poly(vinyl alcohol)/graphene nanoplatelets nanocomposite, M Morad,M M Fadlallah,M AHassan and E Sheha, Mater. Res. Express 3 (2016) 035015.*

[13]. *Structure, thermal and electrical properties of Germanium oxide/Graphene nano-composite for high performance magnesium battery, E. Sheha, A. Bassyouni, Energy and Environment Focus(2016) 5 (1), 29-34.*

[14]. *Characterization of Ionic Polymer Blend Electrolytes Based on Polyvinyl Alcohol Doped with Selenious Acid-Sodium Bromide, F. Ahmad1, E. Sheha, and M. A. Hassan, J. Adv. Phys.,(2016)* 5 (4), 309-315

[15]. *Ion transport properties of magnesium bromide/Dimethyl sulfoxide non-aqueous liquid electrolyte, E. Sheha, Journal of Advanced Research (2016)7 (1), 29-36.*

[16]. *Effect of tetraethylene glycol dimethyl ether on electrical, structural and thermal properties of PVA-based polymer electrolyte for magnesium battery, Rania Gamal, E. Sheha, N. Shash, M. G. El-Shaarawy, Acta physica polonica A, 127(2015)803.*

[17]. *Structural, thermal and electrical properties of plasticised PVA based polymer electrolyte, E Sheha, MM Nasr, MK El-Mansy, Materials Science and Technology, 31 (9), 1113-1121.*

[18]. *Synthesis and characterization of poly(vinyl alcohol)-acid salt polymer electrolytes Reda Khalil, Eslam Sheha, Taha Hanafy, and Omar Al-Hartomy Mater. Express 4, 483-490 (2014)*

[19]. *Studies on TiO_2/reduced graphene oxide composites as cathode materials for magnesium-ion battery, E. Sheha, Graphene, 2014, 3, 36-43.*

[20]. *Effect of succinonitrile on electrical, structural and thermal properties of PVA-based polymer electrolyte for magnesium battery, Belal M. Abdel-Samie, Rania Gamal, Eslam M. Sheha, Journal of Energy and Power Engineering 8 (2014) 1159-1165*

[21]. *Preparation and characterization of Mg2+-ion conducting composite based on poly (vinyl alcohol) with various concentrations of Li_2O, Rania Gamal, E. Sheha, N. Shash, M. G. El-Shaarawy, Mater. Express 4(2014)293.*

[22]. *The role of $MgBr_2$ to enhance the ionic conductivity of PVA/PEDOT:PSS polymer composite, E **Sheha**, Mona Nasr and M K El-Mansy, Journal of Advanced Research, In Press.*

[23]. *The Role of TiO_2 Anatase Nano-Filler to Enhance the Physical and Electrochemical Properties of PVA-based Polymer Electrolyte for Magnesium Battery, B.M. Abdel-Samiea, A. Basyouni, R.M. Khalil, E. **Sheha**, H. Tsuda, T. Matsui, Journal of Materials Science and Engineering A 3 (10) (2013) 678-689*

[24]. *of poly (vinyl alcohol)/poly(3,4-ethylenedioxythiophene)poly(styrenesulfonate) polymer blend Characterization:structure, optical absorption, electrical and dielectric properties, E **Sheha**, Mona Nasr and M K El-Mansy, Phys. Scr. 87(2013) 035701.*

[25]. *Prototype System for Magnesium/TiO_2 Anatase Batteries, **E Sheha**, Int. J. Electrochem. Sci, 8(2013) 3653.*

[26]. *Preparation and physical properties of (PVA)0.7(NaBr)0.3(H3PO4)xM solid acid membrane for phosphoric acid – Fuel cells, F. Ahmad, **E. Sheha**, Journal of Advanced Research, 4(2013)155.*

[27]. *Electrical conduction and dielectric relaxation in p-type PVA/CuI polymer composite, M.H. Makled, **E. Sheha**, T.S. Shanap, M.K. El-Mansy, Journal of Advanced Research 4 (2013), 531-538.*

[28]. *Characterization of PVA/CuI polymer composites as electron donor for photovoltaic application M. K. El-Mansy, **E. Sheha**, K.R. Patel, G.D. Sharma, Optik-International Journal for Light and Electron Optics 124 (2013), 1624-1631*

[29]. *Structure, dielectric and optical properties of p-type (PVA/CuI) nanocomposite polymer electrolyte for photovoltaic cells* ***E. Sheha****, H. Khoder, T.S. Shanap, M. G. El-Shaarawy, M. K. El-Mansy Optik-International Journal for Light and Electron Optics, 123 (2012)1161.*

[30]. *All-solid-state polymer electrolyte with plastic crystal materials for rechargeable magnesium battery, BM Abdel-Samiea, Rania Gamal, E. Sheha, Nanotech 2012 Vol. 3,533-563.*

[31]. *Impact of hydroquinone on thermal and electrical properties of plasticized* $(PVA)_{0.7}(LiBr)_{0.3}(H_2SO_4)_{2.9M}$ *solid acid membrane, S. Badr,* ***E. Sheha****, Polymer International, 60(2011)3058.*

[32]. *Impact of ethylene carbonate on electrical properties of PVA/* $(NH_4)_2SO_4$ */*H_2SO_4 *proton conductive membrane, M. E. Gouda, S.K. Badr, M. A. Hassan****, E. Sheha****, Ionics 17 (2011) 255.*

[33]. *Preparation and physical properties of* $(PVA)_{0.75}(NH_4Br)_{0.25}(H_2SO_4)_{xM}$ *solid acid membrane,* ***E. Sheha****, Journal of Non-Crystalline Solids, 356 (2010) 2282.*

[34]. *Investigations of* $(PVA)_{0.7}(NaBr)_{0.3}(H_2SO_4)_{xM}$ *Solid Acid Polymer Electrolyte Using Positron Annihilation Lifetime Spectroscopy, E. Hassan Aly, M. A. Hassan,* ***E. Sheha****, Journal of Polymer Science: Part B: Polymer Physics,48(2010) 2038.*

[35]. *Structural and electrical properties of pure and H2SO4-doped (PVA)0.7(NaI)0.3 solid polymer electrolyte, S. Badr, E. Sheha, R. M. Bayomi, M,G. El-Shaarawy, Ionics, 16(2010)269.*

[36]. *Investigations on the electrical and structural properties of PVA doped with (NH4)2SO4, M. A. Hassan, M. E. Gouda, E. Sheha, Journal of Applied Polymer Science, 116 (2010) 1213.*

[37]. *Ac conductivity and Ultrasonic Studies in KHCO3 Compound F Salman, S Abouelhassan, E Sheha, M Elmansy Turkish Journal of Physics (2008)32, 97-104*

[38]. *Ionic conductivity and dielectric properties of plasticized PVA0.7(LiBr)0.3(H2SO4)2.7M solid acid membrane and its performance in a magnesium battery, E. Sheha, Solid State Ionics 180(2009) 1575.*

[39]. *An investigation of the electrical conductivity and ultrasonic properties of the KHCO3 compound, S Abouelhassan, F Salman, M Elmansy, E Sheha Physica Scripta (2009)80 (3), 035402.*

[40]. *S. Aboelhssan, F. Salman,* ***E. Sheha****, M. K. Elmansy, An investigation of the electrical conductivity and ultrasonic properties of the* $KHCO_3$ *compound, Physica Scripta 80(2009)035402.*

[41]. *A high voltage magnesium battery based on* H_2SO_4*-doped* $(PVA)_{0.7}(NaBr)_{0.3}$ *solid polymer electrolyte,* ***E. Sheha****, M.K. El-Mansy, J. Power Sources 185 (2008) 1509.*

[42]. *Electrical conductivity and dielectric properties of cesium sulfate based materials, M.G. El-Shaarawy, H. Khoder,* ***E. Sheha****, Materials Chemistry and Physics, Volume 103, Issue 1, 15 May (2007)69.*

[43]. *Dielectric Properties and Conductivity of* $KHCO_3$*, F. Salman, S. Aboelhssan,* ***E. Sheha****, M. K. Elmansy, Turk J Phys 28 (2004) , 57.*

[44]. *Dimer Order-Disorder Transition Dependence on the Optical Absorption Parameters of the* $KHCO_3$ *Compound, S. Aboelhssan,* ***E. Sheha****, F. Salman, M. K. Elmansy, Surface Review and Letters, Volume 11, Issue 02, (2004)199.*

[45]. *Characterization of KHCO3 single crystals S Abou-elhassan, F Salman, M. Elmansy, E.Sheha Surface Review and Letters(2004) 11 (01), 83-86.*