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EDUCATION

Ph.D.	Texas A&M University, College Station, Texas, 1991 Major: Chemical Engineering Dissertation: "*A* Study of Li/BrCl in $SOCl_2$ (Li/BCX) and $ZnBr_2$ Cells" Dissertation Supervisor: Ralph E. White
M.A.Sc	University of British Columbia, Vancouver Canada, 1988 Major: Chemical Engineering Thesis: "Simultaneous Electrosynthesis of Alkaline Hydrogen Peroxide and Sodium Chlorate" Thesis Supervisor: Colin W. Oloman
B.Sc (Hons, 1st. Class)	University of Lagos, Lagos, Nigeria, 1984 Major: Chemical Engineering Thesis: "Studies on Properties of Cellulose Triacetate-Cellulose Acetate Butyrate Blends Thesis Advisor: O. O. Omatete

PROFESSIONAL EXPERIENCE

08/2012 – Present	Professor – Department of Chemical & Biomedical Engineering, Florida A&M University and Florida State University
01/18/19 – 07/31/19	Visiting Professor – Department of Chemical Engineering, Federal University of Technology, Owerri, Imo State, Nigeria
05/2017 – 08/2017	Visiting Professor, Department of Chemical Engineering, Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria.
05/2015 – 08/2015	Visiting Professor, Department of Chemical Engineering, Covenant University, Ota, Ogun State, Nigeria.
8/2001 – 07/2011	Associate Professor – Department of Chemical & Biomedical Engineering, Florida A&M University and Florida State University.
09/2010 – 08/2011	Visiting Associate Professor, Department of Chemical Engineering, Covenant University, Ota, Ogun State, Nigeria.
08/1995 – 07/2001	Assistant Professor, Department of Chemical Engineering, Florida A&M University and Florida State University
01/1994 -07/1995	Research Associate, Department of Chemical Engineering, University of South Carolina, Columbia, SC 29208.

07/1991 -12/1993 Senior Research Engineer, Monsanto Chemical Company, St. Louis, MO
01/1988 - 05/1991 Graduate Research Assistant, Department of Chemical Engineering, Texas A&M University, College Station.
09/1985 -12/1987 Graduate Research Assistant, Department of Chemical Engineering, University of British Columbia, Vancouver, Canada

INDUSTRIAL WORK EXPERIENCE

06/2004 - 08/2004 Faculty Fellow, NASA Glen Research Center, Cleveland, OH.
06/2007 - 08/2007 Summer Faculty Researcher, Sandia National Laboratories, Albuquerque,
06/2010 - 08/2010 Faculty Fellow, Oak Ridge National Laboratory, Oak Ridge, TN.
06/1991 - 12/1993 Senior Research Engineer, Monsanto Company, St. Louis, MO 63167
03/1983 - 09/1983 Trainee Engineer (Internship), A. J. Seward, Lagos, Nigeria.

HONORS AND AWARDS

Carnegie African Diaspora Fellowship, 2015, 2017
Fulbright Scholar, Nigeria, 2010 – 2011
Faculty Research Fellowship Award, Oak Ridge National Lab, 2010
High Merit Award for Pioneering Nanotechnology Research, Masscal Sci. Instruments, 2007
NASA Faculty Fellowship Award, 2004
Recipient of Lockheed Martin E&M Minority Institution of the Year Award, 1998
Recipient of Black Faculty Grant from Florida State University Committee,1997
Recipient of FSU First-Year Assistant Professor Research Award, 1996
Best graduating Chemical Engineering Student award, University of Lagos, 1984
First Prize: 1984 NSChE National Design Contest for all graduating seniors in Nigeria.
Recipient of UAC and Federal Government of Nigeria Scholarships, 1980 - 1984

Membership in Professional Organizations

Member – American Institute of Chemical Engineers, 1986 - Present
Member – The Electrochemical Society, 1988 - Present
Member – National Organization of Black Chemists and Chemical Engineers (NOBChE), 2004
Member – American Electroplaters & Finishers Society, 1998 - 2009
Member – NSChE, 2006 - present

TEACHING ACTIVITIES

Kinetics and Reactor Design
Introduction to Chemical Engineering
Mass & Energy Balances
Electrochemical Engineering
Directed Individual Studies
Honors Research in Chemistry
Honors Research in ChE
Advanced Kinetics and Reactor Design*
Chemical Engineering Materials
Chemical Engineering Computations
Computer Applications in Chemical Engineering

Research Methods*
Thermodynamics
Chemical Engineering Environmental
Introduction to Process Analysis and Design
Mass and Energy Balance I
Mass and Energy Balances II
Electrochemical Engineering Science
Advanced Electrochemical Engineering Science*
Advanced Chemical Engineering Mathematics I*
First year Engineering Laboratory
* = Graduate level courses

New Courses Developed
ECH 5937 Advanced Electrochemical Engineering Science (graduate)
ECH 4705 (4937r) Electrochemical Engineering Science (undergraduate)
ECH 4781 Chemical Engineering Environmental
ECH 4937 Interdisciplinary Design in ChE

STUDENT ADVISING AND SUPERVISION

Chair of Master's Thesis Supervisory Committee
Aruna Kuraganti, "Feasibility Study of One-step Fully Adaptive Plating Technique for Electronic Inter-connect Applications", - *1998*
Renata Itoe, "Analysis of Simultaneous Oxygen Reduction and Methanol Oxidation Processes in a Direct Methanol Fuel Cell", - *1999*
Huei-Hsin Chen, "Characterization and Nanostructure Analysis of Electrodeposited $CuInSe_2$ Thin Film for Applications in Flexible Solar Cells", - *2006*
Leelarani Katam, "Hydrogen Generation from Sodium Borohydride using Polymer-stabilized Catalyst", *2007*
Shamalee Whitelocke, "Electrocatalysis of oxygen reduction in Fuel Cells: Tungsten Oxide Substrate Stability", - *2009*
Tiffany Long, "Electroless deposition of tri-metallic alloys on the surface of carbon nanotubes activated by a polymer-stabilized palladium catalyst ink", - *2012*
Shannon Anderson, "Synthesis of co-deposited Electroless Pd-Cu Catalyst for Nitrate Reduction", *2013*
Joel Sankar, "Oxidation of glycerol with unactivated electroless CuNiMoP catalyst", 2017
Naveen Prasad Mendi – "Catalytic degradation of ibuprofen contaminated aqueous solution using $MnFe/Al_2O_3$ Catalyst", 2018

Chair of Doctoral Dissertation Supervisory Committee
Dibyendu De, "Characterization of Kinetics and Mechanisms of Electrochemical Nitrate Reduction Using Surface Modified Carbon Fiber Electrode", *1999 (UM) (Co-Chair)*
Shawn Austin, "Numerical Simulation of Transport in Open-Cell Mesophase Pitch Derived Carbon Foams", *2010*
Jamie Gomez, "Electroless-Electrolytic Binder-free Electrodes for Electrochemical Power Sources", *2013*

Vincent Enontiemonria Efeovbokhan, (co-chair) "Investigation of Biodiesel Production using Potash from Agricultural Wastes", 2013 (Covenant University)
Shannon Anderson, "Development of Novel and Effective Methods for the Extraction of Neodymium Using Sodium Bis (2-ethyl hexyl) Sulfosuccinate Reverse Micelles", *2017*
Oyidia Elendu, "Glycerol Electrooxidation with CuNiMoP Electrocatalyst for Co-Generation of Energy and High Value Chemical Under Alkaline Conditions", 2017
Venroy Watson, "Enhancement of the Performance of the Load Bearing Components of Flow and Non-Flow Electrochemical Power Sources", 2019
James Akrasi (Co-Chair), "Electrochemical Study of Glycerol Oxidation on NiCuSnP Catalyst in a Redox-Flow Cell", *2019*
Wasu Chaitree, "Co-Ni-Mo Synthesis as a Non-Noble Metal Electrocatalyst for Ethanol Electrooxidation", 2020

Member of Master's Thesis Supervisory Committee

Tara Dean, "Convective-Diffusive Model in Spin Coating", *1997*
David Grymonpre, "The Effects of Carbon Particles on Aqueous Phase Pulsed Streamer Corona", 1996
Kamishan Martin, "Application of Nanotechnology", *2002 (IE)*
Kai-Fan Wang, "Design, installation and performance assessment of solar energy using dual axis tracker", *2008 (IE)*

Member of Doctoral Dissertation Supervisory Committee

- ✓ Maria Bosse Fuenzahda, "Role of Joule Heating on the Free Convection Process in a Batch Electrophoretic Cell", *1998*
- ✓ Sahid Smith, "Computational Fluid Dynamics Investigations of Blood Flow through a Bi-leaflet Mechanical Heart Valve and Left Coronary Artery System", *2006*
- ✓ Selma Medeđović , "Degradation of Atrazine in Pulsed Corona Reactors", *2007*
- ✓ Nekeisha S. Sweeney, "Acute Pancreastitis: A Study of Possible Initiating Mechanisms", 2007
- ✓ Antonio Soares, "Electrical – Modeling of single tin dioxide nanobelt structures for chemical sensors", *2008 (EE)(Major advisor – Dr Reginald Perry)*
- ✓ Samuel T. Adedokun, "Texture and Strength of Aluminum Alloys", 2008 (ME – Major Advisor Dr. Peter Kalu)
- ✓ Shellikeri Annadanesh, "Lithium-Air and Lithium-Air Flow batteries for high energy density and marine propulsion", (EE) Summer 2013 (Major Advisor – Dr Jim P. Zheng)
- ✓ Renee E. Gordon, "Low-Cost Pack Cyaniding Method Using Cassava Leaves to case-Harden Mild Steel", Spring 2017(ME – Major advisor Dr. Peter Kalu)
- ✓ Ruben Nelson, ""Developing Impedance Models for Thermal, State of Charge and Aging Effects of Commercial Lithium-Ion Batteries", Spring 2021 (E&CE – Major Advisor – Dr. Mark Weatherspoon))
- ✓ Omonayo Bolufawi, "A Novel Lithium-ion Capacitor Safety Evaluation and Multi-functional Variable Stress Performance Degradation Under Accelerated Aging Test", (EE&CE – Major Advisor Dr. Jim P. Zheng) Summer 2020
- ✓ Dhevathi Rajan Rajagopalan Kannan, "The Effects of Pulse Charging on Commercial Lithium-ion Batteries", (EE&CE – Major Advisor Dr Mark Weatherspoon) Fall 2020
- ✓ Taofeek Akintola, "Investigation of Lithium Titanate Oxide as a High-Power Anode Material in Lithium-Ion Capacitor", (EE&CE -Major Advisor, Dr, J. P. Zheng) Fall 2020

- ✓ Khaleel s. Muhammed, "Modeling the impact of land use on habitat quality in Choctawhatchee river and bay watershed" – PhD – civil & environmental engineering - Major Professor – Dr. Gang Chen – April 2021
- ✓ Shefik Bowen, "Diffusive and Electro-Osmotic Swelling Dynamics and Crosslinking Analysis in Hydrogels and Collagen: from Modeling to Experimental Insights", (ChE – Major Advisor Dr Daniel Halinnan) – Fall 2024
- ✓ Michael Blatt, "Study of Dendrite Mitigation in Lithium Metal Batteries Using Transport and Mechanical Means", (CBE – Major Advisor, Dr. D. Hallinan) - Spring 2025
- ✓ Benhur Asefaw, "Selenium Recovery from Wastewater Based on Exclusively Extracellular Selenium Nanoparticles Production", (CEE – Major Advisor, Dr. Gang Chen) Spring 2025
- ✓ Hakeem Kadeem Thomas, "Predictive Health Modeling of Commercial Lithium-Ion Batteries Using EIS-Based Data and Machine Learning", (ECE – Major Advisor, Dr. Mark Weatherspoon) Spring 2025
- ✓ Nafiza Anjum "Mxene-Conductive Polymer Composite for High-Performing Electrochemical Energy Storage", (IE – Major Advisor, Dr. Okenwa Okoli) – Spring 2025
- ✓ MD Shahin Alam, "Contaminants Fate, Transport, and Management Across Diverse Watersheds", (CEE – Major Advisor, Dr. Gang Chen) Fall 2025
- ✓ Mahesh Dheerasinghe, "Advancing Solid-State High Entropy Electrolyte Discovery via Computational Modeling", - (FSU Chemistry & Biochemistry Department – Major Advisor – Dr. Bin Ouyang) – Expected - Spring 2027
- ✓ Ajay Shaji – "High Entropy Electrolytes for Solid State Batteries", - (FSU Chemistry & Biochemistry Department – Major Advisor – Dr. Y. Zheng) – Expected Spring 2027
- ✓ Brandon Sauval – "Development of cathode materials for high-energy low-cost Na-ion batteries (FSU Chemistry & Biochemistry Department - Major Advisor – Dr. Yan Zheng) – Spring 2028
- ✓ Modupe Elizabeth Ojewumi – "Hydrochar and Environmental Engineering Applications", - (CEE – Dr. Gang Chen) – Expected Spring 2027

Postdoctoral Fellows Supervised

M.D. Reyes-Tolosa, "Corrosion of metalized Ceramics", 2009

Rakap Murat, "Hydrolysis of ammonia borane for hydrogen generation", 2010

Undergraduates Research Projects Supervised (Mentored Undergraduate Students)

1. [#]Terry Ake, "Study of Transport Parameters of Diatomic Oxygen in a Sulfuric Acid/Methanol Mixture", (URP) 1997
2. [#]Tochi Nwoga, "Thermal Treatment of Electrodeposited Nickel-Hydroxide Film", (URP) 1999
3. Yolanda Stokes, "Electroextraction of Citric Acid", 1996
4. Arlissa Lee, "Liquid-Liquid Extraction of Nickel Metal: A Modeling Approach", 1996
5. Francesco Whittenberger, " Heart Defibrillation", 1996
6. Corey Hayes, "Mechanisms of Heart Fibrillation", 1996

[#] Honors Thesis in ChE

7. Robert Bell, "Infuence of Phosphorus on the Corrosion Properties of Electrodeposited CoFeCu Soft Magnetic Thin Films", (URP) 2000
8. Gretchen Achenbach, "Structural and Compositional Studies of Electrochemically Deposited and Thermally Optimized Nickel Hydroxide Thin Films", 2000
9. Tanya Hicks Tanya Hicks, "Numerical Simulations of Calcium Current in a Single Cardiac Cell", (URP) 2001
10. #Monique Dupree, "Electrodeposition and Characterization of CuInSe thin Films for Solar Cell Applications", 2003
11. Abdulsomad Shaba, "Electroless Synthesis and Characterization of zero-valent metal-alloy composites", 2004
12. Paul Chin-Fook, "Numerical Simulations of Calcium Current in cardiac Cell", 2004
13. #Celina Dozier, "Synthesis and Characterization of Polymer-stabilized zero valent metal nanoparticles for TCE dechlorination", (URP) 2007
14. D. Foxx, "Fabrication and Characterization of glucose biosensor based on polymer-stabilized transition metal nanoparticles", 2007
15. Diana Gomez, "A study of Glucose Oxidase Biofuel Cell", 2008
16. Kristine Ramos, "Synthesis and Characterization of Methanol-Tolerant Oxygen Electrocatalyst", 2008
17. A. C. Aofolaju, "Deposition of $CuIn(SeGa)_2$ for Photoelectrochemical Hydrogen Generation", 2006
18. #Mimi Daniel, "Cyclic Voltammetry Study of the Role of Glucose in MPTP Induced Mimic of Parkinson's Disease", (URP) 2008
19. #Mario Jean-Rejouis, "Synthesis of Biodiesel from Soybean oil using Polymer-Immobilized Heterogeneous Acid Catalyst", (URP) 2008
20. Latia Deravil, "Synthesis of TiO_2-Co-Mo nanoparticles catalyst for Cost-effective generation of portable hydrogen from Sodium Borohydride", 2008 – 2009
21. #Lauren Wilson, **"**FeCo plated carbon nanotubes for RF applications", (URP) 2007 - 2009
22. Hanna Mochona, "Spectral finger-prints of bacteria samples using laser induced breakdown spectroscopy", 2008 - 2009
23. Lauren Martin, "Thermal Behavior of Electroless CNT-FeCo Composite in Simulated Body Fluid in Applied RF Magnetic Field", 2009
24. #Shannon Anderson, "Hydrogen generation by the hydrolysis of $NaBH_4$ using electroless Ni-Mo catalyst", (URP) 2008 – 2010
25. Adisu Samuel, "Effect of annealing on the electroless Ni catalysis of the hydrolysis of sodium borohydride", 2008 – 2009
26. Marline Daceus, "Use of zero-valent metal nanoparticles for waste treatment", 2008 - 2010
27. Britney Thompson, "Bio-hydrogen generation from simple sugar", 2009
28. Velencia Witherspoon, "Ultracapacitor Modeling", 2009
29. Omitope Taylor, "Methanol-tolerant oxygen Electrocatalysts", – 2009 – 2010
30. Janika Shannon, "Synthesis and characterization of fuel cell catalyst", 2010
31. Jasmine Alexander, "Biomedical Applications of Metal Nanoparticles: Dopamine Electrochemistry", 2010
32. Shakira N. El-Hout, "The Enhancement Effects of Ethanol in Alkaline Solution on the Oxidation of Electroless Co and Ni-Mo Metal Catalysts", 2011

33. Omitope Taylor, "Effect of Ethanol Concentration on the Oxidation of Two-Metal Catalysts", 2012
34. Jamal Stephens, "Analysis of Electroless Co-Mn Oxide-Based Supercapacitor", Summer 2012
35. Adedokun Adedoji Adedoyin, "Electroless deposition of Iron-Gadolinium alloy onto carbon nanotubes for biomedical applications" (URP) 2013 J. Kosivi, "Impedance Behavior of Binderless Ni-Mo Composite Oxide Cathode for a Li-O2 Battery", 2013
36. Wete Telama, "Electroless Sn-Cu alloy for Li-ion batteries", 2013.
37. Jeffrey Ethier, "Effect of Copper Particle Size on the Product Distribution from the Electrochemical Reduction of Carbon Dioxide", (URP) 2013 – 2014
38. Ever Velasquez, "Kinetics of Liquid-liquid extraction of Dysprosium from Nuclear Wastes", (URP) 2015 – 2016
39. Zion Haynes, "Electroless synthesis of Sn-Cu alloys and oxides on C-Felt for energy storage applications", 2018
40. M. Weetom, "Mott-Schottky (MS) and Electrochemical Impedance Spectroscopy (EIS) Characterization of Electrolessly Deposited Composite Metals on Carbon Fiber Surfaces", 2018
41. *Nathaniel Stanley, "The effect of Phosphorous Doping Level on a CoMo Electrocatalyst's Partial Oxidation of Ethanol", Fall (2018)*
42. Markus F. Kittendorf, "Core-shell Sn-Cu/C Electrode for CO_2 Electroreduction to Formate", 2021
43. Camilo Ramirez, "Deposition/dissolution chemistry of MnO_2 in the presence of an organic acid chelating agent", 2023 – 2024
44. Emmanuel Scott, "Electrodeposition/Stripping of MnO_2 in a mixture of chelating agents", 2023 – 2024
45. Esther Perceval, "Synthesis of Electrocatalyst for Seawater Electrolysis", 2025 – 2026
46. Cameron Connor, "Electroless plating of Ni-Mo Electrocatalyst", 2025
47. Zeb Gray Saunders, "EIS analysis of electrocatalyst", 2025

SCHOLARLY OR CREATIVE ACTIVITIES

Publications

Google Scholar Citations: *https://scholar.google.com/citations?user=pSHTii8AAAAJ&hl=en*
*(Citations since 2021: 902; **ALL:** h-index: 25, i-10 index: 41)*

Patents

C. W. Oloman and E. Kalu, "Electrochemical Cogeneration of alkali metal halate and alkaline peroxide solutions", US Patent No: 5074975 (1991)
R. M. Cribb, J. D. Capistran and E. E. Kalu, "Apparatus for measuring electrical surface resistivity of a moving web", Patent No: WO/1994/0000769 (1994)
E. E. Kalu and J. Gomez, "A method of fabricating a high performing air cathode for lithium-air (Li-air) battery", - *USA Provisional Patent Application* No: 61/529,599 (2011)
E. E. Kalu and J. Gomez, "Method of fabricating a binder-free electrode for electrochemical power sources", *USA Non-provisional Application – claims priority over 61/529,599*, Application No: 13601380 (2012)

Books

A. Kaw and E. E. Kalu, "Numerical Methods with Applications", 1st edition , http://www.autarkaw.com, (2008)
- This book resulted from NSF sponsored project on the development of numerical methods curriculum for undergraduate students in engineering. It forms part of the Holistic Numerical Methods Institute located at USF at the web site, http://numericalmethods.eng.usf.edu.

Refereed Journal Articles under review or in press

- E**. E. Kalu**, O. Elendu, Y. Yeboah, I. S. Ike, "Electrooxidation of Glycerol on CuNiMoP Electrocatalyst: Effect of Applied Potential", under review *Electrochemica Acta. (*2026)

1) Venroy Watson, Yaw D. Yeboah, Mark H. Weatherspoon, **Egwu Eric Kalu**, " Free-standing and Binder-free Porous Carbon Cloth (C-Felt) Anodes for Lithium-Ion Full Battery", *Batteries* (2024)

Refereed Journal Articles Published

1. N Anjum, MM Rahman, A Elattar, A Sijuade, **EE Kalu**, "High-Yield MILD Synthesis of Ti3C2Tx MXene: Characterization and Application in Developing Energy Storage Device", - Advanced Sustainable Systems, p. 2500402, 2025 ***https://doi.org/10.1002/adsu.202500402***
2. V Watson, YD Yeboah, MH Weatherspoon, EE Kalu, "Free-Standing and Binder-Free Porous Carbon Cloth (C-Felt) Anodes for Lithium-Ion Full Batteries", *Batteries,* **11** (3), 111
3. Christelle Ivane Azambou, Osita Obineche Obiukwu, Patrice Kenfack Tsobnang, Ignas Tonlé Kenfack, Egwu Eric Kalu, Emeka Emmanuel Oguzie, "Electrochemical performance and structural evolution of layered oxide cathodes materials for sodium-ion batteries: A review", *J. Energy Storage*, **94**, 112506 (2024)
4. Christelle Ivane Azambou, Patrice Kenfack Tsobnang, Osita Obineche Obiukwu, Ignas Tonlé Kenfack, Egwu Eric Kalu, Emeka Emmanuel Oguzie, "First-principles study of the titanium-doping effects on the properties of O3-type $NaNi_{0.25}Fe_{0.25}Mn_{0.5}O_2$ cathode material for sodium-ion batteries", *J. Solid State Chemistry,* **335**, 124705 (2024)
5. Uloma Onyeka, Egwu Kalu, Damaris Okafor, "Potential of Lignocellulosic Agro-Waste to Produce Value-Added Products", *Proceedings,* **91** (1), 127 (2024)
6. R. E. Gordon, **E. E. Kalu**, A. R. Adetunji, D. Campbell, P. N. Kalu, "The Effect of the Environment on the Case Hardening Characteristics of AISI 1018 Steel during Cassava Leaf Pack Cyaniding", Alloys **3** (1), 1-14 (2023)
7. C. I. Azambou, F. H. K. Djioko, O. O. Obiukwu, P. K. Tsobnang, **E. E. Kalu**, I. T. Kenfack, E. E. Oguzie, "Structural, electronic, mechanical and thermodynamic properties of lithium-rich layered oxides cathode materials for lithium-ion battery: Computational study", Materials Today Communications, **35**,105738 (2023) doi.org/10.1016/j.mtcomm.2023.105738
8. I. S. Ike, S. E. Iyuke, E. E. Kalu, "Comparative Studies of Solutions of Homogeneous Electrochemical Capacitors Models", *J. Energy Storage,* **35**, 102221 (2021)
9. W. Chaitree, **E. E. Kalu**, Z. Liang, Y. D. Yeboah, "Effects of bath composition and thermal treatment on the performance of Co-Ni-Mo-P electrocatalyst supported on carbon for the electro-oxidation of ethanol", *J. Alloys & Compounds*, **860**, (4) 158404 (2021), doi.org/10.1016/j.jallcom.2020.158404
10. U. Onyeka, D. Ukaero, E. Kalu, "Potential Health Threat due to Migration of Lead and Aluminum into Food Cooked with Recycled Metal and Alloy Pots", *Current Developments in Nutrition*, Vol. 4, Issue Supplement_2, June 2020, Page 769, https://doi.org/10.1093/cdn/nzaa052_038

11. L. S. Ochonogor, V. E. Efeovbokhan, J. Sankar, E. E. Kalu , Oxidation of Glycerol with Oxygen Molecules as the Oxidant over Activated Clay Material Catalysts *Journal of Physics: Conference Series* **1378** (3), 032036 (2019)
12. W. Chaitree, **E. E. Kalu**, "Cu-Ni-Mo Electrocatalyst for Ethanol Electro-oxidation", *J.Electrochem. Soc.***166**(10), H392 – H403 *(*2019)
13. V. Watson, Wete Telama, Y. Yeboah, Jim Zheng, **E. E. Kalu**, "Conductive and Porous SnCu-Coated Carbon Cloth Network for Binder-free Li-Ion Storage Anodes", *Int. J. Electrochemical Sc,* **14**(2) 2004 – 2026 *(*2019)
14. V. G. Watson, Z. D. Havnes, W. Telama, Y. D. Yeboah, M. H. Weatherspoon, J. P. Zheng, **E. E. Kalu**, "Electrochemical performance of heat treated SnO_2-SnCu@C-Felt anode materials for lithium-ion Batteries", *Surfaces and Interfaces* **13**, 224 – 232 (2018)
15. V. Watson, Y. Yeboah, Mark Weatherspoon, Jim Zheng, **E. E. Kalu**, "Preparation of Encapsulated Sn-Cu@graphite Composite Anode Materials for Lithium-ion Batteries", *Int. J. Electrochemical Sci,* **13**, 7968 – 7988 *(*2018)
16. A. Shellikeri, V. Watson, D. Adams, **E. E. Kalu**, J. R. Read, T. R. Jow, J. S. Zheng, J. P. Zheng, "Investigation of Pre-Lithiation in Graphite and Hard Carbon Anodes Using Different Lithium Source Structures", *J. Electrochem. Soc.* **164** (14), A3914 – A3924 (2017)
17. J. Sankar, E. N. Onyeozili, **E. E. Kalu**, "Oxidation of Glycerol with Unactivated Electroless CuNiMoP Catalyst", ChemEngineering **1** (2) (2017)
18. S. Anderson, M. Nilsson, **E. E. Kalu**, "Electrochemical Impedance Spectroscopy (EIS) Characterization of Water/Sodium Bis(2-Ethylhexyl) Sulfosuccinate-HDEHP/n-Dodecane Reverse Micelles for Extraction of Neodymium", *ChemEngineering* **1** (1), 3 (2017)
19. Shellikeri, V. G. Watson, D. L. Adams, **E. E. Kalu**, J. R. Read, T. R. Jow, J. P. Zheng, "Pre-Lithiation of Carbon Anodes Using Different Lithium-Sources", *ECS Transactions* **77** (11), 293 – 303 (2017)
20. S. Anderson, M. Nilsson, C. Clark, **E. E. Kalu**, "Micelle Mediated Extraction of Neodymium and Electrochemical Characterization of AOT Reverse Micelles", *ECS Transactions* **77** (11), 989 – 996 (2017)
21. J. Akrasi, Y. D. Yeboah, **E. E. Kalu**, "A Group Additivity Based-Thermodynamic Analysis of a Conceptual Glycerol/Ferric Redox Flow Battery", *ECS Transactions* **77** (11), 2005 – 2010 (2017)
22. K. O. Amoo, E. N. Onyeozili, **E. E. Kalu**, J. A. Omoleye, V. E. Efeovbokhan "Activity of Varying Compositions of Co-Ni-P Catalysts for the Methanolysis of Ammonia Borane", *Int. J. Hydrogen Energy,***41** (46), 21221- 21235 (2016)
23. V. E. Efeovbokhan, J. A. Omoleye, **E. E. Kalu**, "Extraction and Use of Potassium Hydroxide from Ripe Plantain Peels Ash for Biodiesel Production", *J. Biobased Mater. Bioenergy*, **10** (1), 1 – 9 (2016)
24. O. Elendu, M. Ojewumi, **E. E. Kalu**, Y. D. Yeboah, "Use of a Mixed Formaldehyde and Sodium Hypophosphite Reducing Agent Bath in the Electroless Synthesis of Cu-Ni-Mo-P Electrocatalyst Active for Glycerol Oxidation", *Int. J. Electrochem. Sc.* **10**, 10792 - 10805 *(2015)*

25. V. Watson, D. Nguyen, E. E. Effiong, **E. E. Kalu**, "Influence of Mixed Electrolyte on the Performance of Iron-ion/Hydrogen Redox Flow Battery", *ECS Electrochem. Letts.***4**, (7) **A**72 – **A**75 *(2015)*
26. S. P. Anderson, **E. E. Kalu**, E. Onyeozili, "Synthesis of Co-deposited Electroless Pd-Cu Ctalayst for Nitrate Reduction", *ECS Transactions* **61**, (10), 15 – 23 (2014)
27. O. Elendu, Y. D. Yeboah, **E. E. Kalu**, "Synthesis of Electroless Cu-Ni-Mo-P/Al2O3 for Glycerol Hydrogenolysis to Propan-1, 2-diol", *ECS Transactions* **61,** (10), 31-42 (2014)
28. R. Nelson, J. Kosivi, M. H. Weatherspoon, **E. E. Kalu**, J. P. Zheng, "Impedance Behavior of Binderless Ni-Mo Composite Oxide Cathode for a Li-O2 Battery via Impedance Spectroscopy", *ECS Transactions*, **58** (22) 15 – 20 (2013)
29. S. P. Anderson, **E. E. Kalu**, "Electroless Nickel-Based Catalyst for Diffusion Limited Hydrogen Generation through Hydrolysis of Borohydride", Crystals **3** (3), 405-418 (2013)
30. R. Nelson, M. H. Weatherspoon, J. Gomez, **E. E. Kalu**, J. P. Zheng, "Investigation of a Li-O_2 cell featuring a binder-free cathode via impedance spectroscopy and equivalent circuit model analysis", *Electrochem. Commun.* **34**, 77-80 (2013)
31. J. R. Gomez, **E. E. Kalu**, R Nelson, M. H. Weatherspoon, J. P. Zheng, "Thin Film Co-MnO2 by Combined Electroless-Electrolytic Techniques for Ultracapacitor and Li-Air Battery Applications" ECS Transactions 45 (18), 1-13 (2013)
32. J. Gomez, **E. E. Kalu**, R. Nelson, M. H. Weatherspoon, J. P. Zheng, "Binder-free Co-Mn Composite Oxide for Li-Air Battery Electrode" *J. Mater Chem. A,* **1**, 3287 - 3294 (2013)
33. J. Gomez, **E. E. Kalu**, "High-performance Binder-free Co-Mn Composite Oxide Supercapacitor Electrode", *J. Power Sources* **230**, 218 - 224 (2013)
34. J. Gomez, **E. E. Kalu**, R. Nelson, C. Akpovo, M. H. Weatherspoon, J. P. Zheng, "Binder-free Electrode Fabrication by Electroless-Electrolytic Method", *ECS Electrochem. Lett.*, **1**(6), D25 - D28 (2012)
35. J. Gomez, R. Nelson, **E. E. Kalu**, M. H. Weatherspoon, J. P. Zheng, "Erratum to "Equivalent Circuit Model Parameters of a High-Power Li-ion Battery: Thermal and State of Charge Effects" [J. Power Sources 196 (2011) 4826 – 4831], J. Power Sources **218,** 5 (2012)
36. **E. E. Kalu**, M. Daniel, M. R. Bockstaller, "Synthesis, characterization, electrocatalytic and catalytic activity of polymer-stabilized metal nanoclusters', *Int. J. Electrochem. Sc*. **7**, 5297 – 5313 (2012)
37. M. Rakap, **E. E. Kalu**, S. Özkar, "Hydrogen generation from hydrolysis of ammonia-borane using Pd-PVB-TiO_2 and Co-Ni-P/Pd-TiO_2 under stirred conditions", *J. Power Sources* 210, 184 – 190 (2012)
38. L. Wilson, **E. E. Kalu**, L. Martin and M. E. McHenry "Decoration of surface of carbon nanotubes with Iron-cobalt (FeCo) alloy using polymer-stabilization and electroless deposition techniques for thermotherapy applications", *J. Mater. Chem.* 22, 595 – 601 (2012)
39. J. Gomez, R. Nelson, **E.E. Kalu**, M.H. Weatherspoon, J.P. Zheng, "Composite Metal Oxide Catalysts for Li-air Battery", *Abstracts of Papers of the American Chemical Society*, **242**, 29-Fuel (2011)
40. J. Gomez, R. Nelson, **E. E. Kalu**, M. H.Weatherspoon, J. P. Zheng, "Equivalent Circuit Model Parameters of a High-Power Li-ion Battery: Thermal and State of Charge Effects", *J. Power Sources* 196, 4826-4831 (2011)

41. M. Rakap, **E. E. Kalu**, S. Özkar, "Cobalt-nickel-phosphorus supported on Pd-activated TiO_2 (Co-Ni-P/Pd-TiO_2) as cost-effective and reusable catalyst for hydrogen generation from hydrolysis of alkaline sodium borohydride solution", *J. Alloys & Compounds*, 509, 7016-7021 (2011)
42. M. Rakap, **E. E. Kalu**, S. Özkar, "Polymer-immobilized Palladium Supported on TiO2 (Pd-TiO_2) as Highly Active and Reusable Catalyst for Hydrogen Generation from Hydrolysis of Unstirred Ammonia-Borane Solution", *Int. J. Hydrogen Energy* 36, 1448-1455 (2011)
43. M. Rakap, **E. E. Kalu**, S. Özkar, "Hydrogen Generation from the Hydrolysis of Ammonia Borane Using Cobalt-Nickel-Phosphorus (Co-Ni-P) Catalyst Supported on Pd-activated TiO_2 by Electroless Deposition", *Int. J. Hydrogen Energy* 36, 254-261(2011)
44. **E. E. Kalu**, K. S. Chen, T. Gedris, "Continuous-Flow Biodiesel Production Using Slit-Channel Reactors", *Bioresource Technology* 102 4456-4461 (2011)
45. **E. E. Kalu**, R. Bell, M. Dupree, "Improvement of the Corrosion Behavior of Electrodeposited CoFeCu Thin Films", *Mater. Chem. & Phys*. 124 (1) 689-693 (2010)
46. Xiaolong Jia, Jessica Listak, Velencia Witherspoon, **E. Eric Kalu**, Xiaoping Yang, Michael R. Bockstaller, "Effect of Matrix Molecular Weight on the Coarsening Mechanism of Polymer-Grafted Gold Nanocrystals", Langmuir 26 (14) 12190-12197 (2010)
47. M.D. Reyes-Tolosa, **E.E. Kalu**, J. Orozco-Messana, A. Erb, P. N. Kalu, M.A. Hernàndez-Fenollosa, H.J. Bolina, "Corrosion Resistance, Morphological and Electrical Properties of Electroless Ni-Mo-P thin films deposited on Ceramic and Kapton Substrates", *ECS Trans*. 25, 81-88 (2010)
48. K. S. Chen and **E. E. Kalu**, "Biodiesel Production from Vegetable Oils using Slit-Channel Reactors", *Sandia Report*, SAND2008-0213 (2008)
49. H. –H. Chen, P. N. Kalu, **E. E. Kalu**, "CuInSe2 Thin Films Deposition on Flexible Substrates: Effect of Electrolyte Recirculation Rate and Deposition Potential Effects", J. Solid State Electrochem. 14 (6) 1013 – 1020 (2010)
50. **E. E. Kalu**, "Properties of Nanocrystalline Electrodeposited CoFeP Alloy with Low Phosphorus Content", J. Solid. State Electrochem. 11 (9): 1145-1156 (2007)
51. D. Foxx, **E. E. Kalu**, "Amperometric Biosensor Based on Thermally Activated Polymer-Stabilized Metal Nanoparticles", Electrochem. Commun. 9, 584 - 590 (2007)
52. **E. E. Kalu**, K. Ramos, D. Waryoba and P. N. Kalu, "Polymer-Stabilized PdRuSe Nanoparticles for Oxygen Electrocatalysis", ECS Trans. 11, (1) 261 (2007)
53. D. De, **E. E. Kalu**, P. P. Tarjan and J. D. Englehardt, "Kinetic studies of the electrochemical treatment of nitrate and nitrite ions on iridium-modified carbon fiber electrodes", Chemical Engineering & Technology, 27 (1): 56 – 64 (2004)
54. S. Grady, G. D. Wesson, M. M. Abdullah and **E. E. Kalu**, "Prediction of 10-mm Hydrocyclone Separation Efficiency Using Computational Fluid Dynamics", Filtration & Separation, 40 (9) 41 - 46 (2003)
55. S. Grady, G. D. Wesson, M. M. Abdullah and **E. E. Kalu**, "Prediction of Flow Field in10-mm Hydrocyclone Using Computational Fluid Dynamics", Fluid and Particle Separations Journal, 14, 1 – 11 (2002)
56. Kuruganti, K.S. Chen and **E. E. Kalu**, "Evaluation of a Printable Catalyst for Use in the Flexcircuit and Printed-circuit Board Application", Plating and Surface Finishing, 88, (7), 60 - 66 (2001)

57. **E. E. Kalu**, T. Nwoga, V. Srinivasan and J. W. Weidner, "Cyclic Voltammetric Studies of Effects of Time and Temperature on the Capacitance of Electrochemically Deposited Nickel Hydroxide", J. Power Sources, 92, 163-167 (2001)
58. D. De, J. D. Englehardt and **E. E. Kalu**, "Electroreduction of Nitrate and Nitrite Ion on Platinum Group Metal Catalyst Modified Carbon Fiber Electrode: Chronoamperometry and Mechanism Studies", J. Electrochem. Soc., 147, 4573 – 4579 (2000)
59. D. De, J. D. Englehardt and **E. E. Kalu**, "Cyclic Voltammetric Studies of Nitrate and Nitrite Ion Reduction at the Surface of Platinum Group Metal Catalyst Modified Carbon Fiber Electrode", J. Electrochem. Soc., 147, 4224 – 4228 (2000)
60. **E. E. Kalu** , "Electrochemical Measurement of the Activity of Printable Catalysts Used for Electroless Metallization", Plating and Surface Finishing, Vol. 98 (no. 10), 62 – 67 (2000)
61. Erratum to the paper below (#23), J. Electrochem. Soc., 148, 2449 (2001)
62. R. N. Itoe, G. D. Wesson and **E. E. Kalu**, "Evaluation of Oxygen Transport Parameters in H2SO4-CH3OH Mixtures Using Electrochemical Methods", J. Electrochem. Soc., 147, 2445-2450 (2000)
63. Kuruganti, K. S. Chen and **E. E. Kalu**, "Tapping Mode Atomic Force Microscopy Analysis of a Novel Catalyzation Technique on Non-conducting Substrates", Electrochemical and Solid State Letters, 2 (1), 27-29 (1999)
64. **E. E. Kalu**, " Ageing Effects of Electroless Cobalt Bath on the Microstructure and Magnetic Properties of Co-P Films " Plating and Surface Finishing., Vol. 95 (no. 3), 74-78 (1997)
65. **E. E. Kalu**, R. E. White and D. T. Hobbs, "Use of Hydrogen Anode for Nitrate Waste Destruction", J. Electrochem. Soc. 143, 3094-3099 (1996)
66. **E. E. Kalu** and R. E. White, "Thermal Analysis of Spirally Wound Li/BCX and Li/SOCl2 Cells", J. Electrochem. Soc., 140, 23-31 (1993)
67. **E. E. Kalu**, R. E. White and E. C. Darcy, "Bulk Thermal Capacity Determination for Li/BCX and Li/SOCl2 Cells", J. of Power Sources, 39, 193 - 201 (1992)
68. **E. E. Kalu**, R. E. White and E. C. Darcy, "Calorimetric Determination of the Thermoneutral Potential of Li/BCX and Li/SOCl2 Cells", J. Electrochem. Soc.,139, 2755-2759 (1992)
69. **E. E. Kalu**, R. E. White and E. C. Darcy, "Measurements of the Fundamental Thermodynamic Parameters of Li/BCX and Li/SOCl2 Cells", J. Electrochem. Soc., 139, 2378-2381 (1992)
70. **E. E. Kalu** and R. E. White, "The Effects of Variable Channel Width and Br2 Complexing Organic Phase on the Performance of a Zn/Br2 Cell" AIChE .J, 37,1164-1174 (1991)
71. **E. E. Kalu** and R. E. White, "In Situ degradation of Polyhalogenated Aromatic Hydrocarbons by Electrochemically Generated Superoxide Ions" J. Electrochemical Soc., 138, 3656 –3660 (1991)
72. **E. E. Kalu** and C. Oloman, "Simultaneous Electrosynthesis of Alkaline Hydrogen Peroxide and Sodium Chlorate" J. Applied Electrochemistry, 20, 932 - 940 (1990)
73. **E. E. Kalu**, Q. Nguyen, X. Yang and J. Lielmezs, "Application of the Modified Van der Waals Equation for Unsaturated Vapour and Liquid states," Thermochemica Acta, 112, 215 - 220 (1987)

Contributions to Books & Proceedings Volumes [ξ = reviewed]

1. CR Akunne, O Bosah, EE Kalu, "Comparative Performance Analysis of Non-Precious Metal-Based and Iridium-Based Electrocatalysts in Seawater and Alkaline Electrolyzers Electrochemical Society Meeting Abstracts 248, 1893-1893 (2025)
2. EE Kalu, CR Akunne, DR Rolison, R Nuwayhid, RH DeBlock, TG Novak, " Influence of Electrode Surface and Electrolyte Chemistry on MnO_2 Nucleation Mechanism in Zn/MnO2 Aqueous Battery", Electrochemical Society Meeting Abstracts 248, 939-939 (2025)
3. U. Onyeka, E. Kalu, C. Okafor, "Potential of Lignocellulosic Agro-Waste to Produce Value-Added Products', *Proceedings* **91** (1), 127 (2024)
4. I. S. Ike, I. J. Sigalas, S. E. Iyuke, E. E. Kalu, The Role of Modeling and Simulation in the Achievement of Next-Generation Electrochemical Capacitors, Chapter 8, in Electrochemical Devices for Energy Storage Applications, M. A. Kebede (ed.) and F. I. Ezema (ed.), CRC Press, Boca Raton, USA, 12/11/2019, eISBN 9780367855116, https://doi.org/10.1201/9780367855116, pp. 151 – 180 (2019)
5. I. S. Ike, I. J. Sigalas, S. E. Iyuke, E. E. Kalu, The Contributions of Electrolytes in Achieving the Performance Index of Next-Generation Electrochemical Capacitors (ECs), Chapter 11, in Electrochemical Devices for Energy Storage Applications, M. A. Kebede (ed.) and F. I. Ezema (ed.), CRC Press, Boca Raton, USA, 12/11/2019, eISBN 9780367855116, https://doi.org/10.1201/9780367855116, pp. 215 – 248 (2019)
6. E. E. Kalu, W. Chaitree*, Effect of Heat Treatment and Bath Compositions on the Performance of Co-Ni-Mo-P Electrocatalysts for Ethanol Electro-Oxidation ECS Meeting Abstracts, **30**, pp. 1529-1529 (2019)
7. V. G. Watson*, D. R. R. Kannan, L. Morris, A. Shellikeri, P. L Moss, M. H. Weatherspoon, J. P. Zheng, Y. D. Yeboah, E. E. Kalu, Comsol Modelling of the Experimental Results Obtained from a Lithium Ion Battery with a Low Binder Content Lithium Iron Phosphate (LiFePO4) Cathode, ECS Meeting Abstracts, **1**, pp. 97-97 (2019)
8. V. G. Watson, Z. Haynes, Y. D. Yeboah, M. H. Weatherspoon, J. P. Zheng,R, E. E. Kalu, "Electroless synthesis approach for Cu_2O-CuO Nanowires/Whiskers on C-Felt for Lithium ion Battery anode materials", *ECS Meeting Abstracts*, 235, 59 – 59.
9. Nelson, V. G. Watson, D. Kannan, M. Weetom, M. H. Weatherspoon, "MS and EIS Characterization of Electrolessly Deposited Composite Metals on Carbon Fiber Surfaces", *ECS Meeting Abstracts*, 235, 1939 – 1939 (2019)
10. E. E. Kalu, K. F. Adekunle, O. Elendu, I. J. Nzeribe, T Amaechi, J Sankar, P.J. Ezeani, Y. D. Yeboah "Electroless Cu-Ni-Mo-P Catalyst for Electrooxidation and Thermochemical Oxidation of Glycerol", 2018 AIChE Annual Meeting
11. V. G. Watson, **E. E. Kalu**, Y. D. Yeboah, M. H. Weatherspoon, J. P. Zheng, "Electroless encapsulation of C-cloth with Sn and Sn-Cu alloy for Li-ion Battery anode", *ECS Meeting Abstracts,* 1200 – 1200 (2018)
12. **E. E. Kalu**, W. Chaitree, "Ni-Modified Co-Mo Electrocatalyst for ethanol oxidation in alkaline medium", *ECS Meeting Abstracts*, 1583 – 1583 (2018)
13. **E. E. Kalu**, W. Chaitree, "Influence of Ni on the activity of Co-Mo Electrocatalyst for ethanol oxidation", *ECS Meeting Abstracts*, 1275 – 1275 (2018)
14. **E. E. Kalu**, J. Akrasi, Y. D. Yeboah, "Electrochemical Activity of Non-Noble Metal Alloy as Catalyst Towards Oxidation of Glycerol in Acidic Media: A Case for the Conceptual Glycerol/Ferric Redox Flow Battery", Electrochemical Society Meeting Abstracts 233, 1276-1276 (2018)

15. W. Chaitree, **E. E. Kalu**, "Synthesis of Co-Ni-Mo as Non-noble Electrocatalysts for Ethanol Oxidation", *ECS Meeting Abstract* (2017)
16. **E. E. Kalu**, V. G. Watson, W. Telema, "Electroless Deposition of Sn on Carbon Cloth for Use as Anodes in Lithium Ion Batteries', *ECS Meeting Abstracts*, 1093 – 1093 (2017)
17. A. Shellikeri, V. G. Watson, D. L. Adams, **E. E. Kalu**, J. P. Zheng, "Pre-Lithiation Treatment of Carbon Anodes Loaded with Different Li-Source Structures" *ECS Meeting Abstracts*, 334-334 (2017)
18. O. Elendu, **E. E. Kalu**, Y. D. Yeboah, "Cu-Ni-Mo-P/C Electrocatalyst for the co-generation of energy and fine chemicals from glycerol electrooxidation", ECS *Meeting Abstracts,* 2079 - 2079
19. E Velasquez, S Anderson, M Nilsson, **E Kalu**, "Investigation of the kinetics of electrochemically modulated separation of dysprosium", ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY 251 (2016)
20. S. Anderson, **E. Kalu**, C. Clark, M. Nilsson, "Electrochemically modulated extraction of neodymium", Abstracts of Papers of the American Chemical Society 251 (2016).
21. J. Gomez, W. Telama, **E. .E Kalu**, "Electroless Sn-Cu Alloy Electrodes for Li-Ion Batteries". *ECS eeting Abstracts*, 279-279 (2014)
22. R. Nelson, M. H. Weatherspoon, **E. E. Kalu**, J. Kosivi, J. P. Zheng, "Investigations of Electrode Contributions to the Impedance of Li-Air Cell", ECS Meeting Abstracts, 57 – 57 (2014)
23. S. Anderson, L. Deravil, M. Rakap, **E. E. Kalu**, E. N. Onyeozili, "Electroless Deposition of Low-Cost Reusable Transition Metal Active Catalyst on Oxide Supports for Hydrogen Generation from Hydrides", ECS and SMEQ Joint International Meeting Abstract 824 – 824, Cancun, Mexico , Oct. 5 – 10 (2014)
24. J. Gomez, **E. E. Kalu**, "A Time Dependent Model of Electroless Deposition of Co-Mn Alloy", ECS and SMEQ Joint International Meeting Abstract 961 – 961, Cancun, Mexico , Oct. 5 – 10 (2014)
25. V. G. Watson, **E. E. Kalu**, "Electrolyte Influence on Iron-Ion/Hydrogen-Ion Redox Flow Battery", ECS and SMEQ Joint International Meeting Abstract 965 – 965, Cancun, Mexico , Oct. 5 – 10 (2014)
26. S. Anderson, E. N Onyeozili, **E. E. Kalu**, "Synthesis of Co-Deposited Electroless Pd-Cu Catalyst for Nitrate Reduction" Abstract # 525, 225th ECS Meeting, Orlando Florida, May 11 -15 (2014)
27. **E. E Kalu**, S. Anderson, M. Nilsson, "Electrochemically Modulated Extraction of Neodymium" Meeting Abstracts, 873-873, 225th ECS Meeting, Orlando Florida, May 11 -15 (2014)
28. J. Ethier, **E. E. Kalu**, "Effect of Copper Particle Size on the Product Distribution of the Electrochemical Reduction of CO2", Meeting Abstracts, 553-553, 225th ECS Meeting, Orlando Florida, May 11 -15 (2014)
29. O. Elendu, Y. D. Yeboah, **E. E. Kalu**, "Electroless Cu-Ni-Mo Catalyst for the Low Pressure Hydrogenolysis of Glycerol to Propan-1, 2-Diol", Meeting Abstracts, 529-529, 225th ECS Meeting, Orlando Florida, May 11 -15 (2014)
30. J. Kosivi, J. Gomez, R. Nelson, **E. E. Kalu**, M. H. Weatherspoon, "Non-Paste Based Composite Cathode Electrode for Lithium Air Battery", Meeting Abstracts, 206-206, 225th ECS Meeting, Orlando Florida, May 11 -15 (2014)

31. J. F.Stephens, **E. E. Kalu**, J. Gomez, M. H. Weatherspoon, J. P. Zheng, "Investigation of Electroless-Electrolytic Ni-Mo Binder-Free Electrode for Ultracapacitor Applications", Meeting Abstracts, 1665-1665, 225th ECS Meeting, Orlando Florida, May 11 -15 (2014)
32. J. Gomez, **E. E. Kalu**, "Low Temperature Cobalt Oxide Electrooxidation Synthesis", ECS Meeting Abstracts, 506-506 (2013)
33. J. R. Gomez, E. E. Kalu, "Low temperature synthetic route for thin film metal oxides for electrochemical energy storage" ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY 245 (2013)
34. J. Gomez, **E.E. Kalu**, "Oxidation potential scheme effect on the formation, properties and performance of Co_yO_x", *Proceeding of the NSF FREEDM Systems Center*, Annual Conference, Raleigh, NC (2013)
35. J. Gomez, **E.E. Kalu**, "A One-Dimensional Model of Electroless Cobalt Film Deposition", *Proceeding of the NSF FREEDM Systems Center*, Annual Conference, Raleigh, NC (2013)
36. J. Gomez, **E.E. Kalu**, R. Nelson, M.H. Weatherspoon, J.P. Zheng, " Thin Film Co-MnO_2 by Combined Electroless-Electrolytic Techniques for Ultracapacitor and Li-air Battery Applications", A*bstract #591,* **221st ECS Meeting**, (2012)
37. J. Gomez, R. Nelson, **E.E. Kalu**, M.H. Weatherspoon, J.P. Zheng, "Composite Metal Oxide Catalysts for Li-air Battery", *Abstract #428*, **220th ECS Meeting**, (2011)
38. J. Gomez, R. Nelson, **E.E. Kalu**, J. P. Zheng and M.H. Weatherspoon, "Equivalent Circuit Modeling of a High Power Li-ion Battery: Thermal and State of Charge Effects", *Proceeding of the NSF FREEDM Systems Center*, Annual Conference, Tallahassee, FL (2010)
39. P.L. Moss, M.H. Weatherspoon, **E.E. Kalu** and J.P. Zheng, "Investigation of Solid electrolyte interfacial layer development during continuous cycling", Proceedings of NSF-ERC FREEDM conference, NCSU, May 18 – 21 (2009), pp. 147 – 150
40. V. J. Witherspoon, **E. E. Kalu**, R. Nelson, M. H.Weatherspoon, J. P. Zheng, "Dynamic Modeling of Ultra-Capacitors", Proceedings of NSF-ERC FREEDM conference, NCSU, May 18 – 21 (2009), pp. 151-153
41. Shellikeri, Z. Y. Liang, **E. E. Kalu**, M. H. Weatherspoon, and J. P. Zheng, "Pseudocapacitance: Metal Oxide Coated on Buckypapers as Electrodes for Electrochemical Capacitors", Proceedings of the 16th International Seminar on Double Layer Capacitors and Hybrid Energy Storage Devices, Deerfield Beach, FL, December 2009.
42. ξS. A. Whitelocke, **E. E. Kalu**, "Catalytic Activity and Stability of Tungsten Oxide Electrocatalyst for Fuel cell Applications", AIChE Annual Meeting Conference Proceedings, Philadelphia PA, Nov 16 – 21, (2008)
43. ξD. Foxx and **E. E. Kalu**, "Fabrication of Mediator-Free Biosensor Using Polymer-Stabilized Nanocomposite Particles", Proceedings of the 23rd Southeastern Conference in Theoretical and Applied Mechanics (SECTAM XXIII) Mayagüez, Puerto Rico, May 21 – 23, 2006.
44. ξR. Bell and **E. E. Kalu**, "Influence of Phosphorous on the Corrosion Properties of Electrodeposited CoFeCu Soft Magnetic Thin Films", in Magnetic Materials, Processes and Devices VI", S. Krongelb, L. T. Romankiw and J. -W. Chang, W. Schwarzacher and C. H. Ahn, Editors, PV 2000-29, The Electrochemical Society Proceeding Series, Pennington, NJ (2001).
45. ξ**E. E. Kalu** "Structure and Magnetic Properties of Electroplated Co-Fe-P Thin Films", in

Magnetic Materials, Processes and Devices V", L. T. Romankiw, S. Krongelb and C. H. Ahn, Editors, PV 98-20, The Electrochemical Society Proceeding Series, Pennington, NJ (1999).

46. ξ**E. E. Kalu**, V. Srinivasan, T. Nwaoga, and J. W. Weidner, "The Effect of Annealing Temperature and Time on the Performance of Porous Nickel Oxide Capacitors", in Selected Battery Topics, G. Halpert, M. L. Gopikanth, K. M. Abraham, W. R. Cieslak, W. A. Adams, et al., Editors, PV 98-15, The Electrochemical Society Proceeding Series, Pennington, NJ (1999).
47. ξD. Thirumalai, **E. E. Kalu** and R. E. White , "Design of Flow Fields for Fuel Cells" in Proceedings of First International Symposium on Proton Conducting Membrane Fuel Cells, S. Gottfeld and A.R. Langrebe, Editors, PV 95-10, The Electrochemical Society Proceeding Series, Pennington, NJ (1995)
48. ξ**E. E. Kalu**, "Ageing Effects of Electroless Cobalt Bath on the Microstructure of Co-P Films", in Magnetic Materials, Processes and Devices IV", L. T. Romankiw and D. W. Harmon, Editors, PV 95-18, The Electrochemical Society Proceeding Series, Pennington, NJ (1995)
49. ξE. C. Darcy, **E. E. Kalu** and R. E. White , "Calorimetric Determination of Thermal Parameters of the Li/BrCl in SOCl2 (BCX) Chemistry" in Proceedings of the 34th International Power Sources Symposium, p. 219 -221, IEEE Service Center, Piscataway, NJ (IEEE cat. n 91CH2863-9) (1991)
50. ξE. C. Darcy, **E. E. Kalu** and R. E. White, "Calorimetric determination of the thermoneutral potential for Li/BrCl in SOCl2 (BCX) cells", in NASA. Marshall Space Flight Center, The 1990 NASA Aerospace Battery Workshop, p 369-394 (SEE N92-27130 17-20)

Technical Reports

1. **E. E. Kalu**,"Electric Field Effects in Li^+ ion Transport in Phase-Change $LiFePO_4$ Particles**"** – A report submitted to Oak Ridge National Laboratory (2010)
2. **E. E. Kalu**, "Solid-Catalyst Conversion of Soybean Oils to Biodiesel with Channel Reactors" – A Final report to Sandia National Laboratories (Contract No. **730469**) (2007)
3. **E. E. Kalu**, "Characterization of Electrochemical Processes on PEO/LiTFSI Polymer Electrolyte System", A report to the Office of University Programs NASA-Glenn Research Center, Cleveland, OH (2004)
4. **E. E. Kalu**, "Structural and Compositional Studies of Electrochemically Deposited and Thermally Optimized Nickel Hydroxide Thin films", A Final Report to DOE/South Carolina EPSCoR-HBCU collaboration – University of South Carolina Chemical Engineering Department (2000)
5. **E. E. Kalu**, "A Feasibility Study of One-step Additive Plating for Printed Wiring Boards" – A Final report to Sandia National Laboratories (Ref. # AW-3098) (1999)
6. **E. E. Kalu,** "Thermal Treatment of Electrodeposited Nickel Hydroxide Thin Films for Supercapacitor Applications", - A Final Report to DOE/South Carolina EPSCoR Program – University of South Carolina Chemical Engineering Department (1998)
7. **E. E. Kalu** and C. W. Oloman, "Novel Methods for Electrochemical Generation of Bleaching Chemicals", PGRPR, **70**, 201 (1987)
8. **E. E. Kalu**, "Thermal and Photolytic Studies of APM's one-step ink", MSL-12195, Monsanto St. Louis (Sept. 1992)

9. **E. E. Kalu**, "Surface Resistance Measuring Apparatus for Flectron: Evaluation of Key Design Parameters", Monsanto APM Technical Note #11 (Jan. 1992)
10. **E. E. Kalu**, "Evaluation of Immersion Tin Baths", Monsanto APM Technical Note, #12 (June, 1992)
11. **E. E. Kalu**, "Electrowinning as a Treatment/Recovery Option for Cobalt", Monsanto APM Technical Note, #13 (Nov. 1992)

Thesis and Dissertations

Kalu, E. E.,"A Study of Li/BrCl in $SOCl_2$ (Li/BCX) and $ZnBr_2$ Cells", Texas A&M University, Ph.D. Dissertation, 1991
Kalu, E. E., "Simultaneous Electrosynthesis of Alkaline Hydrogen Peroxide and Sodium Chlorate", University of British Columbia, Vancouver, M.A.Sc. Thesis, 1988
Kalu, E. E., " Studies on Properties of Cellulose Triacetate-Cellulose Acetate Butyrate Blends", University of Lagos, Nigeria, B. Sc. (Hons) Thesis, 1984

Invited Presentations and Seminar

E. E. Kalu, W. Chaitree, I. S. Ike, "*(Invited)* Kinetic Modeling of Ethanol Electro-Oxidation on Co-Ni-Mo-P Electrocatalyst", Electrochemical Society Meeting Abstracts 243, 1682-1682 (2023)
E. E. Kalu, "Adapting and Using Polymer-Stabilized Zero-Valent Metal Nanoparticles", presented at College of Science & Technology, Covenant University, Ota, Ogun State Nigeria July 24, 2011.
E. E. Kalu, S. Pannala, "Electric Field Effects: Lithium ion Transport in Phase-Change LiPO4/FePO4 Particles", presented at Oak-Ridge National Laboratory Aug. 2010
E. Kalu, "Fuel Cell in Railway Transportation", Presented at the Colegio Oficial de Ingenieros Superiores Industriales de la Comunidad Valenciana, Spain, March 13, 2009
E. Kalu, "Electrodeposition and Characterization of Metal Layers on Flexible Polymer Thin Films", presented at Faculty of Industrial Engineering, Universtat Polytecnica, Valencia, Spain, March 11, 2009.
E. Kalu, "Metal Nanoclusters for Clean Energy, Environmental and Biomedical Applications", Presented at the Department of Chemical Engineering, FAMU-FSU COE, Jan 30, 2009
E. E. Kalu, "Nigeria and its people – an African country", invited presentation to Hawks Rise Elementary School Kindergarten Class, Spring (2002)
E. E. Kalu, "*Printable Catalyst Ink For Electroless Metallization*", invited lecture Presented to the Honors Chemistry Class, Department of Chemistry Florida State University, (March, 22, 2000)
E. E. Kalu, "*Thermal Analysis of Printable Catalyst Ink For Electroless Metallization*", Presented at Department of Chemical Engineering, University of Kansas, Fall (1998)
E. E. Kalu, "Electroless Plating: A Low Tech Thin Film Metallization for High Tech Applications", Presented at the Department of Chemical Engineering, FAMU-FSU COE, Spring (1997)

Technical Presentations and Symposia

65. E. E. Kalu*, O. Elendu, Y. D. Yeboah, CuNiMoP Composite Electrocatalyst for Glycerol Electrooxidation, 13th Edition of International Conference on Catalysis, Chemical Engineering and Technology, October 21-22, 2022

64. **Egwu Eric Kalu**, Wasu Chaitree, "Effect of Heat Treatment and Bath Compositions on the Performance of Co-Ni-Mo-P Electrocatalysts for Ethanol Electro-Oxidation". ECS 2019 *Meet. Abstr.* MA2019-01 1529, DOI 10.1149/MA2019-01/30/1529 (2019)
63. **Egwu Eric Kalu**, James Akrasi, Yaw D. Yeboah, "Electrochemical Activity of Non-Noble Metal Alloy as Catalyst Towards Oxidation of Glycerol in Acidic Media: A Case for the Conceptual Glycerol/Ferric Redox Flow Battery", The Electrochemical Soc. *Meet. Abstr.* **MA2018-01** 1276 **DOI** 10.1149/MA2018-01/20/1276
62. W. Chaitree, **E. E. Kalu**, "Nickel-Modified Co-Mo Electrocatalysts for Ethanol Oxidation in Alkaline Medium", ECS and SMEQ Joint International Meeting (AiMES 2018) Abstract 1583 – 1583, Cancun, Mexico , Sept. 30 - Oct. 4 (2018)
61. **E. E. Kalu**, V. G. Watson, Y. D. Yeboah, M. H. Weatherspoon, J. P. Zheng, "Flexible Free-standing and Binder-free Porous Carbon Cloth (C-Felt) for Lithium-ion Battery Anodes", ECS and SMEQ Joint International Meeting (AiMES 2018) Abstract 873 – 873, Cancun, Mexico , Sept. 30 - Oct. 4 (2018)
60. V. G. Watson, **E. E. Kalu**, Y. D. Yeboah, M. H. Weatherspoon, J. P. Zheng, "Electroless Encapsulation of C-Cloth with Sn and Sn-Cu Alloy for Li-ion Battery Anode",Abstract Vol. **MA2018-01** 1200 **DOI** 10.1149/MA2018-01/18/1200 (2018)
59.O. Elendu, **E. E. Kalu**, Y. D. Yeboah, "Cu-Ni-Mo-P/C Electrocatalyst for the Co-Generation of Energy and Fine Chemicals from Glycerol Electrooxidation", Abstract Vo. MA2017-1 # 2079, 231st ECS meeting, New Orleans LA, May 28 – June 1st (2017).
58. Amoo K. Olawale, Edith N. Onyeozili, **Egwu E. Kalu**, James A. Omoleye, Vincent Efeovbokhan, "Catalytic Activity of Co-Ni-P for the Methanolysis of Ammonia Borane",92nd FAME Chemistry Organized by Florida ACS section, Innsbrook, FL May 5 – 7, 2016
57. S. Anderson, L. Deravil, M. Rakap, **E. E. Kalu**, E. N. Onyeozili, "Electroless Deposition of Low-Cost Reusable Transition Metal Active Catalyst on Oxide Supports for Hydrogen Generation from Hydrides", ECS and SMEQ Joint International Meeting Abstract 824 – 824, Cancun, Mexico , Oct. 5 – 10 (2014)
56. J. Gomez, **E. E. Kalu**, "A Time Dependent Model of Electroless Deposition of Co-Mn Alloy", ECS and SMEQ Joint International Meeting Abstract 961 – 961, Cancun, Mexico , Oct. 5 – 10 (2014)
55. V. G. Watson, **E. E. Kalu**, "Electrolyte Influence on Iron-Ion/Hydrogen-Ion Redox Flow Battery", ECS and SMEQ Joint International Meeting Abstract 965 – 965, Cancun, Mexico , Oct. 5 – 10 (2014)
54. S. Anderson, E. N Onyeozili, **E. E. Kalu**, "Synthesis of Co-Deposited Electroless Pd-Cu Catalyst for Nitrate Reduction" Abstract # 525, 225th ECS Meeting, Orlando Florida, May 11 -15 (2014)
53. **E. E Kalu**, S. Anderson, M. Nilsson, "Electrochemically Modulated Extraction of Neodymium" Meeting Abstracts, 873-873, 225th ECS Meeting, Orlando Florida, May 11 -15 (2014)
52. J. Ethier, **E. E. Kalu**, "Effect of Copper Particle Size on the Product Distribution of the Electrochemical Reduction of CO2", Meeting Abstracts, 553-553, 225th ECS Meeting, Orlando Florida, May 11 -15 (2014)
51. O. Elendu, Y. D. Yeboah, **E. E. Kalu**, "Electroless Cu-Ni-Mo Catalyst for the Low Pressure Hydrogenolysis of Glycerol to Propan-1, 2-Diol", Meeting Abstracts, 529-529, 225th ECS Meeting, Orlando Florida, May 11 -15 (2014)

50. J. Kosivi, J. Gomez, R. Nelson, **E. E. Kalu**, M. H. Weatherspoon, "Non-Paste Based Composite Cathode Electrode for Lithium Air Battery", Meeting Abstracts, 206-206, 225th ECS Meeting, Orlando Florida, May 11 -15 (2014)
49. J. F.Stephens, **E. E. Kalu**, J. Gomez, M. H. Weatherspoon, J. P. Zheng, "Investigation of Electroless-Electrolytic Ni-Mo Binder-Free Electrode for Ultracapacitor Applications", Meeting Abstracts, 1665-1665, 225th ECS Meeting, Orlando Florida, May 11 -15 (2014)
48. S. Anderson and **E. E. Kalu**, "Synthesis of Electroless CuPd Catalyst for Glycerol Hydrogenolysis", presented at NOBChE 39th Annual Conference, Washington D.C, Sep. 25 – 28, 2012
47. J Gomez and **E. E. Kalu**,"Binderless Composite Oxide for Ultracapacitor Applications", presented at NOBChE 39th Annual Conference, Washington D.C, Sep. 25 – 28, 2012
46. J. Gomez, **E. E. Kalu**, R. Nelson, M. Weatherspoon, J. P. Zheng,"Thin film Co-MnO_2 by combined electroless-electrolytic techniques for Ultracapacitor and Li-air Battery Applications', to be presented at 221st Electrochemical Society Meeting, Seattle, WA, May 6 – 11, 2012
45. L. Martin, L. Wilson, E. E. Kalu, M. E. McHenry, "Thermal Behavior of Electroless CNT-FeCo composite in Simulated Body Fluid in Applied RF magnetic field", presented at AIChE Annual Meeting Conference, Minneapolis, MN, Oct 16 – 21, 2011
44. J. Gomez, **E. E. Kalu**, R. Nelson, M. Weatherspoon, J. P. Zheng "Evaluation of Ni-Mo oxide (Ni-MoOx) Electrocatalyst for Li-Air Battery", presented at AIChE Annual Meeting Conference, Minneapolis, MN, Oct 16 – 21, 2011
43. J. Gomez, **E. E. Kalu**, R. Nelson, M. Weatherspoon, J. P. Zheng, "Synthesis of Composite Metal Oxide Catalyst for Li-Air Battery", presented at 220th Electrochemical Society Meeting, Boston, MA, Oct 9 – 14, 2011
42. J. Gomez, **E. E. Kalu**, R. Nelson, "Composite Metal Oxide Catalysts for Li-Air Battery", *242nd ACS National Meeting, Denver, CO,* Aug. 28 – Sept. 1, 2011
41. S. Pannala, S. K. Martha, J. Nanda, J. Kiggans, A. Kercher, H. Wang, W. D. Porter, **E. E. Kalu**, and N. J. Dudney Thermal and electrochemical behavior of high energy density carbon fiber paper (CFP)-LiFePO4 positive electrodes, *MRS Fall meeting*, 2010
40. M. Covin, **E. E. Kalu**, S. Pannala, "Characterization of Pitch Material for Lithium ion Batteries", Presented at Oak-Ridge National Laboratory, August 2010
39. S. Anderson, **E. E. Kalu**, "Electroless Nickel Based Catalysts for Hydrogen Generation by Hydrolysis of NaBH4", Presented at NOBCChE Annual Meeting, Atlanta, April 2010
38. S. Austin, **E. E. Kalu**, C. A. Moore, G. D. Wesson, D. Stephens, "Direct Numerical Simulation in Open-Cell Mesophase Pitch Derived Carbon Foams", presented at NOBCChE Meeting, Atlanta GA. April 2010
37. **E. E. Kalu**, K. S. Chen and T. Gedris, "A Continuous Flow Biodiesel Reactor: Reaction Enhancement with a Slit-Channel Reactor", to be presented at AIChE Annual Meeting Conference, Nashville TN, Nov 8 – 13, 2009
36. S. Anderson, A. Samuel, **E. E. Kalu**, "Electroless Based Catalysts for Hydrogen Generation by Hydrolysis of $NaBH_4$", to be presented at AIChE Annual Meeting Conference, Nashville TN, Nov 8 – 13, 2009
35. **E. E. Kalu**, M. Daniel and M. Bockstaller, "Synthesis, Characterization and Electrocatalytic Activity of Polymer-Stabilized Metal Nanoparticles", to be presented at AIChE Annual Meeting Conference, Nashville TN, Nov 8 – 13, 2009
34. M.D. Reyes-Tolosa, **E. E. Kalu**, J. Orozco-Messana, A. Erb, P. N. Kalu, M.A. Hernàndez-Fenollosa, H.J. Bolina, "Corrosion Resistance, Morphological and Electrical

Properties of Electroless Ni-Mo-P thin films deposited on Ceramic and Kapton Substrates" presented at 216th Electrochemical Society Meeting, Viena Austria, Oct 4 – 9, 2009
33. P.L. Moss, M.H. Weatherspoon, **E. E. Kalu** and J.P. Zheng, "Investigation of Solid electrolyte interfacial layer development during continuous cycling", Proceedings of NSF-ERC FREEDM conference, NCSU, May 18 – 21 (2009)
32. V. J. Witherspoon1, **E. E. Kalu**, R. Nelson, M. H.Weatherspoon, J. P. Zheng, "Dynamic Modeling of Ultra-Capacitors", Proceedings of NSF-ERC FREEDM conference, NCSU, May 18 – 21 (2009)
31. S. Anderson, A. Samuel and **E. E. Kalu**, "Electroless Nickel-based Catalysts for Hydrogen Generation by Hydrolysis of Borohydride", NOBCChE Annual Meeting St Louis MO, April 18, 2009
30. **E. E. Kalu**, K. S. Chen, T. Gedris, "Continuous-Flow and Enhancement of Reaction Rates of Biodiesel Production Using a Slit-Channel Reactor", NOBCChE Annual Meeting St Louis MO, April 18, 2009
29. S. A. Whitelocke, **E. E. Kalu**, "Catalytic Activity and Stability of Tungsten Oxide Electrocatalyst for Fuel cell Applications", AIChE Annual Meeting Conference, Philadelphia PA, Nov 16 – 21, 2008
28. Kaw, A., Hess, M., **Kalu, E**., Barnicki, S., and Nguyen, D., "Dissemination of Numerical Methods, Beyond the Textbook, Conference and a Paper", 2008 CCLI Conference, Washington DC, Aug 13-15, 2008.
27. Hess, M., Kaw, A., Owens, C., **Kalu, E**. Barnicki, S., "Assessing Impact of Web Based Resources on Student Learning and Satisfaction in a Numerical Methods Course", 2008 ASEE Annual Conference and Exposition, Pittsburg, PA, June 22-25, 2008.
26. S. A. Whitelocke, **E. E. Kalu**, "Catalytic Activity and Stability of Tungsten Oxide Electrocatalyst for Fuel cell Applications", 2008 AIChE Annual Meeting PA, Nov 16 – 21, 2008
25. C. Dozier, D. Waryoba, P. Kalu, **E. E. Kalu**, "Supported Bimetallic Zerovalent Metal Nanoparticles in the Remediation of Chlorinated Organic Contaminated Water", 211th Electrochemical Society Meeting, Chicago IL, May 6 –10, 2007.
24. K. Ramos, **E. E. Kalu**, D. Waryoba, P. Kalu, "Synthesis and Characterization of Polymer-Stabilized Multi-metallic nanoparticles for Electrocatalysis", 211th Electrochemical Society Meeting, Chicago IL, May 6 –10, 2007.
23. H. –H. Chen*, C. Davy, P. N. Kalu and **E. E. Kalu**, "Influence of Ni-P and Ni-Mo Back Contacts on the Properties of CuInSe2 Solar Cell on Flexible Substrates", 209th Electrochemical Society Meeting, Denver CO, May 7 –12, 2006.
22. D. Foxx* and **E. E. Kalu**, "A New Approach to the Fabrication of Mediator-Free Biosensor Using Polymer Stabilized Nanocomposite Particles 209th Electrochemical Society Meeting, Denver CO, May 7 –12, 2006.
21. **E. E. Kalu**, "Environmental Application of Polymer-Stabilized Zero-Valent Metal Nanoclusters", 209th Electrochemical Society Meeting, Denver CO, May 7 – 12, 2006.
20. **E. E. Kalu**, "Methanol-Tolerant Oxygen Electrocatalysts: Synthesis and Characterization of Pd-based Alloys", 209th Electrochemical Society Meeting, Denver CO, May 7 –12, 2006.
19. D. Foxx* and **E. E. Kalu**, " Fabrication of Mediator-Free Biosensor Using Polymer Stabilized Nanocomposite Particles", XXIII Southeastern Conference on Theoretical and Applied Mechanics, Mayaguez, Puerto Rico, May 21-23, 2006.
18. Huei-Hsin Chen, P. N. Kalu, A. Shaba and **E. E. Kalu**, " Characterization and Nonoscale

Analysis of Electrodeposited CuInSe2 on Flexible Polymer for Applications in Thin Film Solar Cells", presented at The Electrochemical Society 204th meeting, San Antonio, TX, May. 9 - 14, 2004.
17. Huei-Hsin Chen, P. N. Kalu, A. Shaba and **E. E. Kalu**, " Electrodeposition and Characterization of CuInSe2 on Flexible Polymer for Applications in Thin Film Solar Cells", presented at The Electrochemical Society 203rd meeting, Orlando, FL, Oct. 12 - 17, 2003.
16. **Kalu, E. E** and Trayanova, N. A. "Modeling Electric Field Stimulation of Single Cardiac Cell: Electrodiffusive Approach", presented at The Electrochemical Society 201st Meeting, Philadelphia , PA , May 12 – 17 (2002)
15. **Kalu, E. E** and Trayanova, N. A Single cell electrodiffusive model. Poster presentation at 9th annual NHLBI Cardiovascular Minority Research Supplement Awardee Session, Annaheim,CA. November, 10 (2001)
14. R. Bell and **E. E. Kalu**, "Influence of Phosphorous on the Corrosion Properties of Electrodeposited CoFeCu Soft Magnetic Thin Films", presented at The Electrochemical Society Fall Meeting, Phoenix, AZ, October 22 – 27, 2000.
13. D. De, J. Englehardt and **E. E. Kalu**, "Cyclic Voltammetric Studies of Nitrate and Nitrite Ion Reduction at the Surface of Nobel Metal Modified Carbon Fiber Electrode" presented at The Electrochemical Society Spring Meeting, Toronto, Ontario Canada, May 8 – 14, 2000
12. D. De, J. Englehardt and **E. E. Kalu**, "Cyclic Voltammetric Studies of Nitrate and Nitrite Ion Reduction at the Surface of Nobel Metal Modified Carbon Fiber Electrode" presented at The Electrochemical Society Spring Meeting, Toronto, Ontario Canada, May 8 – 14, 2000
11. **E. E. Kalu**, "Structure and Magnetic Properties of Electroplated Co-Fe-P Thin Films", Presented at The Electrochemical Society Fall Meeting, Boston, MA, October 2 -6, 1998
10. **E. E. Kalu,** and R. N. Itoe, "Determination of Oxygen Transport Properties in Methanol/Sulfuric Acid Mixture", presented at the annual AIChE meeting in Miami Beach, Florida, November 11 - 16, 1998
9. V. Srinivasan, T. Nwaoga, **E. Kalu** and T. W. Weidner, "The Effects of Annealing Temperature and Time on the Performance of Porous Nickel Oxide Capacitors", Presented at The Electrochemical Society Fall Meeting, Boston, MA, October 2 -6, 1998
8. **E. E. Kalu**, "*Electroextraction of Citric Acid from Aqueous Solutions"*, Presented at the annual AIChE meeting in Chicago, Illinois, November 10 - 15, 1996
7. **E. E. Kalu**, "Influence of Plating Conditions on the Microstructure and the Magnetic Properties of Co-P thin Films, Presented at The Electrochemical Society Fall Meeting, San Antonio, Texas, October 6 -11, 1996.
6. **E. E. Kalu**, "Ageing Effects of Electroless Cobalt Bath on the Microstructure of Co-P Films, Presented at The Electrochemical Society Fall Meeting, Chicago, Illinois, October 8 -13, 1995.
5. **E. E. Kalu** and R. E. White, "*Water and Heat Management in PEM Fuel Cell"*, Presented at the annual AIChE meeting in Miami Beach, Florida, November 12 - 17, 1995
4. **E. E. Kalu**, R. E. White and D. T. Hobbs, "*Use of Sodium Sulfate in Sulfuric Acid Anolyte for a Nitrate Cell Employing a Hydrogen Gas Consuming Anode*", Presented atThe Electrochemical Society Fall Meeting, Chicago, Illinois, October 8 -13, 1995.
3. D. Thirumalai, **E. E. Kalu** and R. E. White, "*Design of Flow Fields for Fuel Cells",* Presented at The Electrochemical Society Fall Meeting, Chicago, Illinois, October 8 - 13, 1995
2. E. C. Darcy, **E. E. Kalu** and R. E. White, "*Calorimetric Determination of Thermal Parameters for the Li/BrCl in $SOCl_2$ (BCX) Chemistry*", Presented at the 34th International Power Sources Symposium, Cherry-Hill, New Jersey, July 1990

1. **E. E. Kalu,** and R. E. White, "*The Effects of Variable Channel Width on the Performance of the Zinc-Bromine Battery*", Presented at the annual AIChE meeting in Chicago (Nov. 1990)

Recent Contracts and Grants

CONTRACTS AND GRANTS RECEIVED

- Aqueous Battery Consortium (ABC), Pending for funding, Department of Energy, 01/01/24 – 12/31/29, Co-PI $1.5M
- Future Renewable Electric Energy Delivery and Management (FREEDM) Systems. Funded by National Science Foundation. 8/1/2008 - 9/30/2019, Co-PI, $2.75 M
- Solid-Catalyst Conversion of Soybean oil to Biodiesel with Slit-Channel reactors. Funded by Sandia National Laboratories. 8/1/2008 – 9/30/2009, PI $40,000
- Partnership for Research and Education in Materials between FAMU and CMU. Funded by National Science Foundation. 3/1/2004 – 2/29/2009, Co-PI $2.8 M
- Holistic Numerical Methods: Unabridged., Funded by National Science Foundation. 1/1/2008 – 12/31/2011. PI $75,259
- Partnership for Research and Education in Materials between Florida A. & M. and Carnegie Melon University. Funded by National Science Foundation. 3/01/2009 – 2/29/2010, Co-PI $100,000
- Holistic Numerical Methods. Funded by National Science Foundation. 3/1/2004 – 4/29/2008. PI $40,000
- Acquisition of Analytical Equipment (GC & Accessories) for Environmental Research. Funded by ERLE. 10/1/2006 – 9/30/2007. PI $250,000

Pending and non-funded Contracts (Recent)

- Supported Iridium as Anode Catalyst for PEM Water Electrolyzers in Response to DE-FOA-0002922, Department of Energy, 09/01/23 – 08/31/26 Co-PI $5.0M
- Advanced Liquid Alkaline Cell Design for Assembly, Department of Energy, 01/01/24 – 12/31/27, Co-PI $100,000 (pending)
- RENUS: Center of Excellence for the production of Green Hydrogen, Department of Defense, 01/01/24 – 12/31/29, Co-PI $5.0 M
- Building Sustainable Community-Based Solar Career Pathways: A community Led Training Partnership, Department of Energy 09/01/22 – 08/31/25, Co-PI $150,000 (not funded)
- Development of a Process for Carbon Electrode Materials from Muscadine Grape Pomace, USDA AFRI, 01/01/23 – 12/31/26, PI $300,000
- Excellence in Research: Understanding the influence of heteroatom dopants in electrocatalysis of energy conversion and storage systems. National Science Foundation (NSF), 06/01/22 – 05/31/25, PI $499,767 (not funded)
- Process for Simultaneous Recovery of Nutrients and Production of Carbon Electrode Materials from Muscadine and Bunch Grapes Pomace, USDA AFRI 09/01/21 – 08/31/24, AFRI PI $300,000 (not funded)
- Catalytic Graphitization of Pine & Switchgrass for Lithium-Ion Battery Anodes, USDA Sun Grant, 02/01/21 – 01/31/24, Co-PI $127,911 (not funded)

- Remote Sensor Technology for the Detection, Quntification and Monitoring of Polycyclic Aromatic Hydrocarbons {PAHs} Arising from offshore Oil Spills, Gulf of Mexico Research Initiatives (GOMRI2017V1B210), 01/01/2018 – 12/31/2020, PI $580,826
- Development of a Sustainable System for Subsurface Remediation, Savanah River Nuclear Solutions, LLC - SRNS-MS-2018-00022 (DOE), 08/01/17 – 07/31/20, PI $916,373

SERVICE

Florida A&M University – Florida State University

University

Member, Tenure & Promotion Committee – 2022 – 2023
Member, Sabbatical Leave Committee – 2021 - 2022
Member, Tenure & Promotion Committee – 2012 - 2014
Member, University wide Committee on Sabbaticals – 2011 - 2013
Member, University wide search committee for the Dean of FAMU-FSU College of Engineering – 2010 -2011
Member, Faculty Senate, Florida A&M University, 2004 – 2006; 2006 – 2008; 2008-2010.
Graduation Faculty Representative (College), Spring Commencement Ceremony, Florida A&M University, 2004 – 2006; Convocation Marshall – 2001
Faculty Adviser to the Audio Production Club at FSU – 2015 - present

FAMU-FSU College of Engineering

Member Strategic Planning Subcommittee - 2023
Member, Promotion & Tenure Committee – 2022 - 2023
Member, Promotion & Tenure Committee – 2012 - 2014
Member, Library Committee – 2007 - present
Chair, Computer Committee - 2003
Member, Computer Committee – 2001- present
Member, Curriculum Committee – 1995 - 2001
Faculty Representative, State-Wide Curriculum Committee for approval of Common Pre-requisite for Pre-engineering community college student transfers – 2001

Department of Chemical & Biomedical Engineering

Member, PhD qualifier Examination Team – 2021 - 2022
Member, Library Committee – 2007 - present
Chair, Computer Committee – 2001-2004
Member, Computer Committee – 1999 - 2004
Member, Graduate Committee – 1995 – present
Member, PhD qualifier Examination Team – 2006 - 2009
Member, Curriculum Committee – 1995 – 2001
Recruiter for Minority Graduate Students – 2001 – presnt
Seminar Organizer – Spring (1997, 2000, 2001, 2003, 2008)

The Profession

Reviewer for Refereed Journals

Editorial Board Member of **Alloys:** An Open Access Journal from **MDPI**
Journal of the Electrochemical Society (1995 – present);
Electrochimica Acta, (2001 – present);
Chemistry of Materials, (2000 – present);
Langmuir, (2006 – present);
Industrial & Engineering Chemistry Research, (1995 – present);
Journal of Solid State Electrochemistry, (2007 – present);
Nanotechnology, (2008);
Electrochemistry Communications, (2007 – present);
Analytical Letters, (2009);
Journal of Applied Electrochemistry, (2001 – 2008);
Materials Chemistry & Physics, (2008 – 2010);
Electroanalysis (Wiley-Blackwell) , (2009 -2010);
Energies – Open Access Journal (MDPI AG) – (2010)
International Journal of Hydrogen Energy – 2010 - present

Reviewer for Text Books and Manuscripts

Books: "Applied Numerical Methods with MATLAB for Engineers and Scientists" – S. C. Chapra - publisher McGraw Hill, 2006
Books: "Applied Numerical Methods with MATLAB for Engineers and Scientists" – S. C. Chapra - publisher McGraw Hill (2nd. Edition) – 2008
Proposals: Kentucky Science & Engineering Foundation, ACS Petroleum Research Fund

Reviewer for Grant Applications

National Science Foundation's (NSF) Directorate of Engineering – 1996 – 2010
NSF Engineering Research Center Review – 2006
National Science Foundation SBIR Program – 2006, 2008
NSF Curriculum & Laboratory Improvement (CLI) Program – 1999 - 2000
Kentucky Science & Engineering Foundation (State of Kentucky), 2006 - 2009
ACS Petroleum Research Fund – 2006 - 2008

Service to the Profession & Professional Associations

NSF Sponsored Minority Workshop on Improving & Retaining Minority Faculty – 2001
Symposium Organizer and Co-Chair – Industrial Electrolysis & Electrochemical Engineering session – 201st Electrochemical Meeting, Philadelphia – 2002
NSF Workshop on Low Temperature PEM Fuel Cells, 2001
NSF Engineering Research Center Visit – 2006
Organizer & Judge IE&EE Undergraduate Poster Session – 2007
Symposium Organizer and Co-Chair – Industrial Electrolysis & Electrochemical Engineering session – 203rd Electrochemical Meeting, Paris – 2003

ECS National Committee Membership

Member of IE&EE Division Student Affairs Committee – 2006 – 2008
Judge for IE&EE Student Achievement Awards – 2007 – 2008

Member IE&EE Electrocatalysis Committee – 2006 – Present

National and International

- Member, Curriculum development committee in Chemical Engineering at Covenant University, Ota Nigeria – 2015
- External Examiner, Covenant University, Ota Nigeria (Chemical Engineering) – 2016
- External P&T evaluator, Chemical Engineering – University of Ohio, Athens – 2017
- External P&T evaluator, Chemical Engineering, King Abdullah University of Sc&Tech, Saudi Arabia – 2017
- External P&T evaluator, Chemical Engineering, Federal University of Technology Owerri, Nigeria - 2019

The Community

Service to the Community

Summer Igbo Language School Teacher – 2001 – Present

Secretary Association of Ndi-Igbo in Tallahassee – 2008 - 2011

Capital Regional Science & Engineering fair Judge – 1997 - 2006

Leon County Science Fair Judge, 2006

Presentations to Elementary and High School Students – 2002, 2003, 2007