

Publications

Journal articles, book contributions, reports, thesis & dissertation [ξ = reviewed]

1. 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)
2. **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)
3. M. Rakap, **E. E. Kalu**, S. Özkar, “Hydrogen generation from hydrolysis of ammonia-borane using Pd-PVB-TiO₂ and Co-Ni-P/Pd-TiO₂ under stirred conditions”, *J. Power Sources* **210**, 184 – 190 (2012)
4. 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)
5. 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)
6. M. Rakap, **E. E. Kalu**, S. Özkar, “Cobalt-nickel-phosphorus supported on Pd-activated TiO₂ (Co-Ni-P/Pd-TiO₂) as cost-effective and reusable catalyst for hydrogen generation from hydrolysis of alkaline sodium borohydride solution”, *J. Alloys & Compounds*, **509**, 7016-7021 (2011)
7. M. Rakap, **E. E. Kalu**, S. Özkar, “Polymer-immobilized Palladium Supported on TiO₂ (Pd-TiO₂) as Highly Active and Reusable Catalyst for Hydrogen Generation from Hydrolysis of Unstirred Ammonia-Borane Solution”, *Int. J. Hydrogen Energy* **36**, 1448-1455 (2011)
8. 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 TiO₂ by Electroless Deposition”, *Int. J. Hydrogen Energy* **36**, 254-261(2011)
9. **E. E. Kalu**, K. S. Chen, T. Gedris, “Continuous-Flow Biodiesel Production Using Slit-Channel Reactors”, *Bioresource Technology* **102** 4456-4461 (2011)
10. **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)
11. 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)
12. M.D. Reyes-Tolosa, **E.E. Kalu**, J. Orozco-Messana, A. Erb, P. N. Kalu, M.A. Hernández-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)
13. K. S. Chen and **E. E. Kalu**, “Biodiesel Production from Vegetable Oils using Slit-Channel Reactors”, *Sandia Report*, SAND2008-0213 (2008)
 14. 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)
 15. **E. E. Kalu**, “Properties of Nanocrystalline Electrodeposited CoFeP Alloy with Low Phosphorus Content”, *J. Solid. State Electrochem.* 11 (9): 1145-1156 (2007)
 16. D. Foxx, **E. E. Kalu**, “Amperometric Biosensor Based on Thermally Activated Polymer-Stabilized Metal Nanoparticles”, *Electrochem. Commun.* 9, 584 - 590 (2007)
 17. **E. E. Kalu**, K. Ramos, D. Waryoba and P. N. Kalu, “Polymer-Stabilized PdRuSe Nanoparticles for Oxygen Electrocatalysis”, *ECS Trans.* 11, (1) 261 (2007)
 18. 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)
 19. 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)
 20. S. Grady, G. D. Wesson, M. M. Abdullah and **E. E. Kalu**, “Prediction of Flow Field in 10-mm Hydrocyclone Using Computational Fluid Dynamics”, *Fluid and Particle Separations Journal*, 14, 1 – 11 (2002)
 21. 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)
 22. **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)
 23. 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)
 24. 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)
 25. **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)
 26. Erratum to the paper below (#23), *J. Electrochem. Soc.*, 148, 2449 (2001)
 27. 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)
 28. 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)

29. **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)
30. **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)
31. **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)
32. **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)
33. **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)
34. **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)
35. **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)
36. **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)
37. **E. E. Kalu** and C. Oloman, "Simultaneous Electrosynthesis of Alkaline Hydrogen Peroxide and Sodium Chlorate" *J. Applied Electrochemistry*, 20, 932 - 940 (1990)
38. **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)
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. S. 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. D. 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. R. 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. **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. **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. D. 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. **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. E. 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. E. 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)
 51. **E. E. Kalu**,”Electric Field Effects in Li⁺ ion Transport in Phase-Change LiFePO₄ Particles” – A report submitted to Oak Ridge National Laboratory (2010)
 52. **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)
 53. **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)
 54. **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)
 55. **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)
 56. **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)

57. **E. E. Kalu** and C. W. Oloman, "Novel Methods for Electrochemical Generation of Bleaching Chemicals", PGRPR, **70**, 201 (1987)
58. **E. E. Kalu**, "Thermal and Photolytic Studies of APM's one-step ink", MSL-12195, Monsanto St. Louis (Sept. 1992)
59. **E. E. Kalu**, "Surface Resistance Measuring Apparatus for Electron: Evaluation of Key Design Parameters", Monsanto APM Technical Note #11 (Jan. 1992)
60. **E. E. Kalu**, "Evaluation of Immersion Tin Baths", Monsanto APM Technical Note, #12 (June, 1992)
61. **E. E. Kalu**, "Electrowinning as a Treatment/Recovery Option for Cobalt", Monsanto APM Technical Note, #13 (Nov. 1992)
62. **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
63. **Kalu, E. E.**, "Simultaneous Electrosynthesis of Alkaline Hydrogen Peroxide and Sodium Chlorate", University of British Columbia, Vancouver, M.A.Sc. Thesis, 1988
64. **Kalu, E. E.**, "Studies on Properties of Cellulose Triacetate-Cellulose Acetate Butyrate Blends", University of Lagos, Nigeria, B. Sc. (Hons) Thesis, 1984