**Dr Bolade Oyeyinka AGBOOLA**
*Areas of Specialisations (**Teaching**): Inorganic and Analytical Chemistry*
*Areas of Specialisations (**Research**): Energy and Environment*
*https://scholar.google.com/citations?hl=en&user=uPiDtIAAAAAJ*

## [1] PERSONAL INFORMATION

**Phone Number:** +234 813 669 1524, +234 705 510 6488
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## [2] UNIVERSITY EDUCATION

- ✓ **April 2007: PhD** in **Physical-Inorganic Chemistry**, Rhodes University, Grahamstown, South Africa
- ✓ **October 1997: MSc** in **Chemistry (Analytical Chemistry Option)**, University of Ibadan, Ibadan, Nigeria
- ✓ **March 1994: BSc** (**Hons**) in **Chemistry,** University of Ibadan, Ibadan, Nigeria

## [3] PRESENT POSITION (January, 2011 - Present)

**Associate Professor and Head of Department:** Department of Petroleum Chemistry and Physics, School of Arts & Sciences, **American University of Nigeria** (**AUN**), Yola, Nigeria.

**a. Teaching:**

***Courses recently taught or supervised:***

- ✓ **Year 3**: Introduction to Catalysis, Petroleum Science, Petrochemicals, Polymer Chemistry & Technology, Analytical Chemistry, Instrumental Methods of Analysis & Applied Spectroscopy, Inorganic Chemistry, Organometallic Chemistry & Catalysis.
- ✓ **Year 4**: Electrochemistry & Corrosion Science, Petroleum Product Analysis & Evaluation, Oil Spill: Effects & Control, Senior Research Projects and Internship in Petroleum Chemistry.

**b. Research Interests:**

- ✓ Electrochemistry of nanomaterials and their applications in the development of electrochemical sensors, energy conversion and storage devices.
- ✓ Corrosion study with focus on oil pipeline corrosion chemistry and prevention.
- ✓ Waste management study: Reclamation of used lubricating oil, and biofuel production.
- ✓ Crude oil and its fractions research: Physical & Chemical Processes, Simulation & Experimental Studies.

**c. Service:**

- ✓ **Department Chair** (**Fall 2016 to Present**) **-** Petroleum Chemistry Department, School of Arts & Sciences (**SAS**), American University of Nigeria.
- ✓ **Chair, Senate Grievance Committee (Spring 2021 to Present) -** American University of Nigeria.
- ✓ **Member** (**Fall 2011 to Present**) **-** School of Arts & Sciences (**SAS**), Curriculum Committee. **Chair** of the committee (**Fall 2015 - Spring 2017)**, American University of Nigeria.
- ✓ **Member** (**Fall 2020 to Present**) - School of Arts & Sciences **(SAS),** Promotion Committee, American University of Nigeria.
- ✓ **Member (Spring 2019 to Present) -** Senate Admission Committee), American University of Nigeria.
- ✓ **Member:** (**Fall 2013 - Spring 2017**) **-** Senate Curriculum Committee), American University of Nigeria.
- ✓ **Member** (**Spring 2014**) **-** Senate Promotion Committee), American University of Nigeria.
- ✓ **Member (Spring 2012):** AUN Senate Committee on **Academic Standards and Policies**), American University of Nigeria.
- ✓ **Faculty Advisor:** (**Fall 2011 - Spring 2015**) **-** American University of Nigeria Students' Chemical Society (**AUNSCS**), American University of Nigeria.
- ✓ Department of Petroleum Chemistry **Laboratory Supervisor:** (**Fall 2012 - Spring 2016**), American University of Nigeria.

## [4] WORK EXPERIENCE

1. **Post-Doctoral Researcher (February 2009-December 2010)** in **Energy and Processes unit**, Material Science and Manufacturing, **Council for Scientific and Industrial Research** (**CSIR**), Pretoria, South Africa.
   ***Research Interest:*** It involves the synthesis of smart materials for applications in electro-chemical energy storage devices (fuel cell, Li-ion battery and supercapacitors).
   ***Award:*** Recipient, and Project Manager for Young Researcher Establishment Fund (**YREF**) at **CSIR**.
   These include Proposals and Projects Development, Supervision of students, Experimental Design and carrying out Laboratory Experiments, Preparation of Research Articles, Conferences and Administrative Duties.
2. **Post-Doctoral Research Fellow, University of Pretoria (2007-2008), National Research Foundation (NRF, South Africa)-Department of Labour (DoL, South Africa) Scarce Skills Postdoctoral Fellowship** (**2007-2008**)**:**
   ***Research:*** My research work involves development of **Nanomaterials Electrochemical based sensors.**
   ***Graduate students supervision:*** Co-supervision of postgraduate (PhD & MSc) students' research work which include regular laboratory work supervision and preparation of research articles.
3. **Tutor/Demonstrator (2004–2006)** for the undergraduate chemistry class, **Rhodes University,** Lucas Avenue, Grahamstown, 6139, South Africa.
4. **Teacher (Sept 2002–Dec 2003):** I taught both Advanced Level Chemistry (**equivalent of university year 1 chemistry class**) and high school Chemistry at ESC Model College, a division of EduServe Consult, Ibadan, Nigeria.
5. **Tutor/Demonstrator (1996-1997)** for University of Ibadan, Nigeria. Undergraduate chemistry classes during my M.Sc. programme.

## [5] RECOGNITIONS, AWARDS, RESEARCH GRANTS PROPOSALS

1. South Africa National Research Foundation (NRF)'s rated researcher Award (valid from **01 January 2011 to 31 December 2016**).
2. Recipient and Project Manager for Young Researcher Establishment Fund (YREF) at Council for Scientific and Industrial Research (CSIR), (**February 2009 - December 2010**).
3. National Research Foundation (NRF, South Africa)-Department of Labour (DoL, South Africa) Scarce Skills Postdoctoral Fellowship (**2007-2008**).
4. Awards during Doctoral Studies:
   - International Centre for Scientific Culture **(ICSC)** World Laboratory Scholarship (Switzerland) (**2004**) for Doctoral Work.
   - Four months visiting research programme (**Feb – Jun, 2006**) at University of Ghent, Belgium.
   - NRF (South Africa) and University of Ghent-BOF (Belgium) bilateral research project funding (**2005 – 2006**).
   - Graduate Assistantship (Rhodes University, South Africa) (**2004 – 2006**).

## [6] PROFESSIONAL AFFILIATION, AND RESEARCH RELATED ACTIVITIES

1. **Graduate Thesis Examination:**
   Regularly act as MSc and PhD examiner for universities in Nigeria and South Africa.
2. **South Africa National Research Foundation (NRF)**'s Technical Auditor, Proposal Reviewer and Member of Process Manufacturing and Energy Advisory Panel (2009 - 2010)
3. **Reviewer:**
   Elsevier Publications, Springer Publications, Wiley Publications, Electrochemical Society Publication, and many more.
4. **Professional Bodies**
   Member **(30110052)** of American Chemical Society (**ACS**), USA.

## [7] RESEARCH OUTPUT

https://scholar.google.com/citations?hl=en&user=uPiDtIAAAAAJ
https://www.researchgate.net/profile/Bolade_Agboola2.

- ***Books & Book Chapters***

1. Analysis of crude oil contaminated soil for sorghum husk and chicken manure bioremediation effectiveness". Victoria Adams, Maryam Awode and **Bolade Agboola** - Book Chapter In: Advances in Bioremediation and Phytoremediation, **ISBN 978-953-51-5568-3.**
2. Recent techniques for the removal of naphthenic acid from heavy crude oils: In Processing of Heavy Crude Oils - Challenges and Opportunities, Intech, Rijeka. Feyisayo V. Adams, Chikaodili E. Chukwuneke, **Bolade O. Agboola**. Chapter 11, page 109, **ISBN: 978-1-83968-410-4.**

- ***Selected Peer-Reviewed Articles***

1. Ash Content and Trace Metal Analysis in Crude Oil Samples, an Undergraduate Laboratory Activity. Chikaodili E. Chukwuneke, Joshua O. Madu, **Bolade O. Agboola, Journal of Chemical Education (JCE), American Chemical Society (ACS) Publication** (**https://dx.doi.org/10.1021/acs.jchemed.0c00494**).
2. Evaluation of Seasonal Variation of Heavy Metal Contamination and Health Risk Assessment in Sabore Field Adamawa State, Nigeria. Chikaodili E. Chukwuneke, Feyisayo V. Adams, Joshua O. Madu, **Bolade O. Agboola**, Jamiu S. Olumoh, Charles Reith, Christiana Okere, Victory F. Inyang, Jennifer A. Tyndall. **International Journal of Environmental Analytical Chemistry, Taylor & Francis Publications, 2020 (https://doi.org/10.1080/03067319.2020.1814270).**
3. Synthesis of Gasoline Range Fuels by the Catalytic Cracking of Waste Plastics Using Titanium Dioxide and Zeolite, Peter E. Nwankwor; Immaculata O. Onuigbo; Chikaodili E. Chukwuneke; Muhammad Falalu Yahaya; **Bolade O. Agboola**; Wan Jin Jahng, **International Journal of Energy and Environmental Engineering (IJEE), Springer Publications, 2020** (**https://doi.org/10.1007/s40095-020-00359-9**).
4. Effects of chemical treatments on the bioethanol yield and composition of Isoberlinia doka waste. Joshua Osuigwe Madu, Tosin Esther Fabunmi and **Bolade Oyeyinka Agboola**. **SN Applied Sciences (2019) 1:216, Springer Publications (https://doi.org/10.1007/s42452-019-0223-z)**
5. Assembly of Quinone-based renewable biobattery using redox molecules from Lawsonia inermis. Halima Ali, Immaculata O. Onuigbo, Tosin E. Fabunmi, Muhammed Yahaya, Madu Joshua, **Bolade Agboola**, Wan Jin Jahng. **SN Applied Sciences, Springer Publications (2019) 1:597, https://doi.org/10.1007/s42452-019-0577-2.**
6. Bioethanol Production from Rice Husk Using Different Pre-treatments and Fermentation Conditions. Madu, J.O. and **Agboola, B.O**. **3 Biotech (2018) 8: 15, Springer Publications**. (**https://doi.org/10.1007/s13205-017-1033-x**).
7. Comparative Supercapacitive Properties of Asymmetry Two Electrode Coin Type Supercapacitor Cells made from MWCNTS/Cobalt Oxide and MWCNTs/Iron Oxide Nanocomposite. John A.O. Oyekunle, Oluwafemi S. Oluwatobi, Joel N. Lekitima Abolanle S. Adekunle, **Bolade O. Agboola**, Kenneth I. Ozoemena, Eno E. Ebenso. **Int. J. Electrochem. Sci., 10 (2015) 3414 - 3430.**
8. MWCNTs/Metal (Ni, Co, Fe) oxide nanocomposite as potential material for supercapacitors application in acidic and neutral media. Abolanle S. Adekunle, Kenneth I. Ozoemena, **Bolade O. Agboola**. **Journal of Solid State Electrochemistry, 2013, Volume 17, Issue 5, pp 1311-1320.**
9. Voltammetric and Impedance studies of Phenols and Its Derivatives at Carbon Nanotubes/Prussian Blue Films Platinum Modified Electrode. Abolanle S. Adekunle, Omotayo A. Arotiba, **Bolade O. Agboola**, Nobanathi W. Maxakato, Bhekie B. Mamba. **International Journal of Electrochemical Science,** 7 **(2012) 8035 - 8051.**

10. Electrocatalytic properties of prussian blue nanoparticles supported on poly(*m*-aminobenzenesulfonic acid)–functionalized single-walled carbon nanotubes toward the detection of dopamine. Abolanle S. Adekunle, Abdullahi M. Farah, Jeseelan Pillay, Kenneth I. Ozoemena, Bhekie B. Mamba and **Bolade O. Agboola**. **Colloids and Surfaces B: Biointerfaces 95 (2012) 186– 194.**
11. Anion exchange membrane based on alkali doped poly(2,5-benzimidazole) for fuel cell. Hongze Luo, Guntars Vaivars, **Bolade Agboola**, Shichun Mu, Mkhulu Mathe, **Solid State Ionics 208 (2012) 52-55**.
12. Supercapacitive properties of symmetry and the asymmetry two electrode coin type supercapacitor cells made from MWCNTS/nickel oxide nanocomposite. Abolanle S. Adekunle, Kenneth I. Ozoemena, Bhekie B. Mamba, **Bolade O. Agboola**, Oluwafemi S. Oluwatobi, **International Journal of Electrochemical Science, 6 (2011) 4760-4774.**
13. Nitrite electrochemical sensor based on Prussian blue/single-walled carbon nanotubes modified pyrolytic graphite electrode. Abolanle S. Adekunle, Bhekie B. Mamba, **Bolade O. Agboola**, Kenneth I. Ozoemena, **International Journal of Electrochemical Science, 6 (2011) 4388-4403.**
14. Electrochemical characterisation of mixed self-assembled films of water-soluble single-walled carbon nanotube-poly(m-aminobenzene sulfonic acid) and iron(II)tetrasulfophthalocyanine. **Bolade Agboola**, Jesselan Pillay, Katlego Makgopa and Kenneth I. Ozoemena, **Journal of the Electrochemical Society, 157 11 F159-F166 (2010).**
15. Electrocatalytic detection of dopamine at single wall carbon nanotubes-iron (III) oxide nanoparticle platform. Abolanle S. Adekunle, **Bolade O. Agboola,** Jeseelan Pillay and Kenneth I. Ozoemena. **Sensors and Actuators B: Chemical 148 (2010) 93-102.**
16. Synergistic enhancement of supercapacitance upon integration of nickel (II) octa [(3,5-biscarboxylate)-phenoxy] phthalocyanine with SWCNT-phenylamine. **Bolade O. Agboola** and Kenneth I. Ozoemena, **Journal of Power Sources 195 (2010) 3841–3848**.
17. Tuning the physico-electrochemical properties of novel cobalt (II) octa[(3,5-biscarboxylate)-phenoxy] phthalocyanine complex using phenylamine-functionalised SWCNTs. **Bolade O. Agboola,** Kenneth I. Ozoemena, Tebello Nyokong, Takamitsu Fukuda and Nagao Kobayashi, **Carbon 48 (2010) 763–773**.
18. Nickel (II) tetra-aminophthalocyanine modified MWCNTs as potential nanocomposite materials for the development of supercapacitors Alfred T. Chidembo, Kenneth I. Ozoemena, **Bolade O. Agboola**, Vinay Gupta, Gregory G. Wildgoose and Richard G. Compton. **Energy Environ. Sci., 2010, 3, 228-236 (RSC Publication).**
19. Electrochemistry of 2-dimethylaminoethanethiol SAM on gold electrode: Interaction with SWCNT-*poly*(*m*-aminobenzene sulphonic acid), electric field-induced protonation-deprotonation, and surface pKa. Jesselan Pillay, **Bolade Agboola** and Kenneth I. Ozoemena, **Electrochem. Communs. 11 (2009) 1292-1296.**
20. Electrocatalytic properties of electrodeposited-cobalt tetrasulphonated phthalocyanines-multi walled carbon nanotubes modified glassy carbon electrode. **Bolade O. Agboola**, Sibulelo Vilakazi and Kenneth I. Ozoemena, **J Solid State Electrochem, 2009, 13, 1367-1379.**
21. Nanostructured cobalt phthalocyanine single-walled carbon nanotube platform: electron transport and electrocatalytic activity on epinephrine. **Bolade O. Agboola**, Jessellan Pillay, Alfred Mocheko and Kenneth I. Ozoemena **J. Porphyrins Phthalocyanines 2008; 12: 1289-1299.**
22. Efficient electrocatalytic detection of epinephrine at gold electrodes modified with self-assembled metallo-octacarboxy phthalocyanine complexes. **Bolade O. Agboola** and Kenneth I. Ozoemena, **Electroanalysis 20, 2008, No. 15, 1696-1707.**
23. Self-assembly and electron transfer properties of metallo-octacarboxy phthalocyanine complexes on gold electrode. **Bolade O. Agboola** and Kenneth I. Ozoemena, **Physical Chemistry Chemical Physics (PCCP), 10, (2008) 2399-2408.**

24. Electro-oxidation of chlorophenols by electropolymerised nickel (II) tetrakis benzylmercapto and dodecylmercapto metallophthalocyanines complexes on gold electrodes. **Bolade Agboola** and Tebello Nyokong, **Electrochim. Acta, 52 (2007) 5039-5045.**
25. Comparative electro-oxidation of nitrite by electropolymerised Co(II), Fe(II) and Mn(III) tetrakis benzylmercapto and dodecylmercapto metallophthalocyanines on gold electrodes. **Bolade Agboola** and Tebello Nyokong, **Anal. Chim. Acta**, **587 (2007) 116-123.**
26. Comparative electro-oxidation of sulphite by self-assembled monolayers (SAMs) of Co(II), Fe(II), Ni(II) and Mn(III) tetrakis benzylmercapto and dodecylmercapto metallophthalocyanines complexes on gold electrodes. **Bolade Agboola** and Tebello Nyokong, **Talanta**, **72 (2007) 691-698.**
27. Voltammetric characterisation of the self-assembled monolayers (SAMs) of benzyl- and dodecyl-mercapto tetra substituted metallophthalocyanines complexes. **Bolade Agboola**, Philippe Westbroek, Kenneth I. Ozoemena and T. Nyokong, **Electrochem Communs., 9 (2007) 310-316.**
28. Synthesis and electrochemical properties of benzyl-mercapto and dodecyl-mercapto tetrasubstituted manganese phthalocyanine complexes. **Bolade Agboola**, Kenneth I. Ozoemena, Philippe Westbroek and T. Nyokong, **Electrochim. Acta, 52 (2007) 2520-2526.**
29. Electrochemical properties of benzyl mercapto and dodecylmercapto tetra substituted nickel complexes: electrocatalytic oxidation of nitrite. **Bolade O. Agboola**, Kenneth I. Ozoemena and Tebello Nyokong, **Electrochim. Acta, 51 (2006) 6470-6478.**
30. Synthesis and electrochemical characterisation of benzyl mercapto and dodecylmercapto tetra substituted cobalt, iron, and zinc phthalocyanines complexes. **Bolade Agboola**, Kenneth I. Ozoemena and Tebello Nyokong, **Electrochim. Acta, 51 (2006) 4379-4387.**
31. Comparative efficiency of immobilized non-transition metal phthalocyanine photosensitisers for the visible light transformation of chlorophenols. **Bolade Agboola**, Kenneth I. Ozoemena and Tebello Nyokong, **J. Mol. Catal. A: Chem., 248 (2006) 84-92.**
32. Hydrogen peroxide oxidation of 2-chlorophenol and 2,4,5 trichlorophenol catalysed by monomeric and aggregated cobalt tetrasulphophthalocyanine. **Bolade Agboola**, Kenneth I. Ozoemena, Tebello Nyokong, **J. Mol. Catal. A: Chem., 27 (2005) 209-216.**
33. Daytime Atmospheric Sulphur Dioxide Concentrations in Ibadan City, Nigeria. P.C. Onianwa, S.O. Fakayode and **B.O. Agboola**, **Bull. Chem. Soc. Ethiop., 15 (2001) 71-78.**

➢ ***Selected Presentations, Proceedings and Papers from Conferences and Workshops***

1. **Oral Presentation:** J.O. Madu, F.V. Adams, **B.O. Agboola**, B.D. Ikotun, I.V. Joseph. Purification of petroleum products contaminated water using modified rice husk ash filters, **Materials Today: Proceedings, 2020.** DOI: 10.1016/j.matpr.2020.03.466
2. **Oral Presentation:** G.A. Nchewi, L.N. Okoro, F.V. Adams, **B.O. Agboola**, Corrosion inhibition efficiency of *Tamarindus Indica* leaves extracts on mild steel in hydrochloric acid, International Conference on Engineering for a sustainable world, (**ICESW**) **2019, 4-8 July, 2019, Ota, Nigeria**.
3. **Workshop:** Council of Independent Colleges (**CIC**) Workshop for Department and Division Chairs. Theme: *Strategic Leadership for Challenging Times*, Phoenix, Arizona, USA, **June 6-8, 2017**.
4. **Oral Presentation:** Jatropha - Biodiesel Opportunity at American University of Nigeria. **B.O. Agboola** and Rotimi Ogundijo. BIONAS, Jatropha Abuja, Nigeria, **13-14 February 2014**- *Two-Day* Seminar on Jatropha Plantation and Biofuel Production. *My participation and interactions attracted the organizer (**BIONAS GHABA, USA**) to show interest in establishing a Biofuel research institute at AUN.*

5. **Oral Presentation:** MWCNTs/Metal (Ni, Co, Fe) oxide nanocomposite as potential material for supercapacitors application in acidic and neutral media. S.A. Adekunle, K.I. Ozoemena, **B.O. Agboola**. Colloids and Energy Conference **21-24 April 2013**, Xiamen, China.
6. **Oral presentation:** Towards finding smart electrode materials for lithium-ion batteries: Nano-sized manganese-carbon nanotube based materials. **B.O. Agboola,** Hongze Luo, Kenneth Ozoemena, Lukas Le Roux and Mkhulu Mathe. CSIR 3rd biennial conference: science real and relevant, Pretoria, South Africa, **31st August-1st September, 2010**.
7. **Oral presentation**: Synthesis, Coordination Self-Assembly and Electron Transfer Properties of Peripherally Substituted Transition Metallophthalocyanine complexes. K.I. Ozoemena, **B.O. Agboola** and D. Nkosi. International Conference on Co-ordination Chemistry (ICCC), Jerusalem, Israel, **July 20-25, 2008**.
8. **Oral presentation**: Metallophthalocyanine (MPc) complexes films on electrodes: Studies of the morphology, spectroscopy electron transfer properties and potential applications as electrochemical sensors. **Bolade Agboola** and Kenneth I. Ozoemena, 1st International Symposium on Electrochemistry, Cape Town, South Africa, **July 9-11, 2008**.
9. **Oral presentation**: Metallophthalocyanines (MPcs) and Carbon nanotubes (CNTs) hybrids in electroanalysis. **Bolade Agboola,** Sibulelo Vilakazi, Tebello Nyokong and Kenneth I. Ozoemena, International (SA-UK Research Network) Workshop on Electrochemistry for Nanotechnology, Pretoria, South Africa, **April 9-10, 2008**.
10. **Oral presentation**: "Self-Assembled Octasubstituted Metallophthalocyanine-Single-Walled Carbon Nanotubes Arrays: Nanoarchitectures with Excellent Electron Transport", Kenneth I. Ozoemena, **Bolade Agboola** and Duduzile Nkosi. 58th Annual meeting of the International Society of Electrochemistry, Banff, Canada, **September 9-14, 2007**.
11. **Oral presentation**: Nano-Architectures and Nanoparticles Incorporating Carbon Nanotubes and Fullerenes: New Hybrids with Excellent Electron Transports. Kenneth I. Ozoemena, Duduzile Nkosi, Jessellan Pillay, Abolanle S. Adekunle, Alfred Mocheko, Solomon Mamuru and **Bolade Agboola**. SACI, INORG 007, Cape Town, **July 8-12, 2007**.
12. **Poster presentation**: Electrochemical and Electrocatalytic properties of benzylmercapto and dodecylmercapto tetra substituted nickel phthalocyanine complexes. **Bolade Agboola**, Kenneth I. Ozoemena and Tebello Nyokong. ESEAC 11th International Conference on Electroanalysis, Bordeaux, France, **June 11-15, 2006.**