Sunday Olakunle Idowu, PhD

Curriculum Vitae
November, 2016

PERSONAL INFORMATION

Work Address: Sunday Olakunle Idowu, PhD
Full Professor

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Department of Pharmaceutical Chemistry,
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Ibadan, Nigeria.

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ACADEMIC QUALIFICATION AND TRAINING

2004: Postdoctoral Fellowship, (Process Understanding)
Department of Analytical Pharmaceutical Chemistry,
Niigata University of Pharmacy and Applied Life Sciences (NUPALS), Niigata, Japan
(*Host: Prof. Kenji Shimada*)

1998: Ph.D. Pharmaceutical Chemistry (Reagent design & Assay Technologies)
University of Ibadan, Ibadan.
Thesis Title**: "**Development and Evaluation of 4-amino-3, 5-dinitrobenzoic acid (ADBA) as a Novel Derivatizing Reagent (*Supervisor: Prof. A.A. Olaniyi*)

1994: M.Sc. Pharmaceutical Chemistry
University of Ibadan, Ibadan, Nigeria
Thesis Title: "4-Amino-3, 5-dinitrobenzoic acid (ADBA) as a Novel Coupling Reagent in UV/Visible Spectrometric Analysis" (*Supervisor: Dr. A.A. Fasanmade*)

1989: Bachelor of Pharmacy
University of Ibadan, Ibadan, Nigeria
Thesis Title**: "**Aqueous Acetone and Dimethylformamide in Hydrophobicity Index Determination on Reversed Phase Thin Layer Chromatography" (*Supervisor: Dr. A.A. Fasanmade*)

PROFESSIONAL EXPERIENCE

2012 Professor, Department of Pharmaceutical Chemistry,Faculty of Pharmacy, University of Ibadan, Ibadan, Nigeria.

2006 – 2012:	Reader /Associate Professor, Department of Pharmaceutical Chemistry, Faculty of Pharmacy, University of Ibadan.
2002 - 2006:	Senior Lecturer, Department of Pharmaceutical Chemistry, Faculty of Pharmacy, University of Ibadan
1998 - 2002:	Lecturer I, Department of Pharmaceutical Chemistry, Faculty of Pharmacy, University of Ibadan
1994 - 1998:	Lecturer II, Department of Pharmaceutical Chemistry, Faculty of Pharmacy, University of Ibadan
1991 - 1992:	Foundation Superintendent Pharmacist, Vandeikya General Hospital, Vandeikya, Benue State, Nigeria
1990 - 1991:	Intern, Pharmacy Department, University College Hospital, Ibadan, Nigeria
Administrative experience:	
Dec. 2005 - Feb. 2010:	Acting Head, Department of Pharmaceutical Chemistry, Faculty of Pharmacy, University of Ibadan.
Nov. 2002 – Dec. 2003:	Coordinator, Department of Pharmaceutical Chemistry, Faculty of Pharmacy, University of Ibadan.
2001:	Acting Sub-Dean (Undergraduate), Faculty of Pharmacy, University of Ibadan.

HONOURS AND AWARDS

2015	Inaugural Lecturer, University of Ibadan. " The lesson of the loaves: small machines, big impact in drug analysis" 9th Inaugural lecture, 2014/2015 session, 13 August 2015, University of Ibadan.
2014	Chair, Curriculum Development Committee, Faculty of Pharmacy, University of Ibadan, Ibadan.
2014	Plenary Speaker, Biotechnology for Health and Sustainable Development, 4th Unibadan Conference of Bomedical Research, Conference Programme and Book of Abstracts, Plenary Lecture 11, July 1- 4, 2014, University of Ibadan, Ibadan.
2014	International Collaborative Research Review Meeting, PhysChem Profiling Lab., Faculty of Pharmacy, University of Ibadan, Ibadan, Nigeria. 18 - 24 June, 2014 (I played host to Dr. Amos Fatokun,

Pharmacology Research Group, School of Pharmacy/School of Life Sciences, Richmond Building, University of Bradford, Bradford, West Yorkshire, BD7 1DP, England, UK.

2012 Plenary Speaker, Biotechnology for Health and Sustainable Development, 3rd Unibadan Conference of Biomedical Research, Conference Programme and Book of Abstracts, Plenary Lecture 6, p 33, July 24 - 27, 2012. University of Ibadan, Ibadan.

2012 Investigator, Centre for Drug Discovery Development and Production (C3DP), Faculty of Pharmacy, University of Ibadan.(MacArthur Funded Project).

2012 Chair, Local Organizing Committee, Pharmacist's Council of Nigeria (PCN)-Organized Foreign Pharmacy Graduate Orientation Programme (FPGOP), 2012. University of Ibadan, Ibadan, Nigeria, August – October, 2012.

2009 University of Ibadan Travel Fellowship Award (2009). 4th Log P Symposium, February 8-11, 2009, ETH , Zurich, Switzerland.

2009 Solidum Pharmaceuticals Ltd. Lagos, Travel Fellowship Award (2009). 4th Log P Symopsium, February 8-11, 2009, ETH, Zurich, Switzerland.

2009 Certificate, PhysChem and ADMET profiling in Drug Research, Swiss Federal Institute of Technology, ETH, Zurich, Switzerland.

2008 Member, American Chemical Society, United States of America.

2004 Postdoctoral Fellowship Award, Niigata University of Pharmacy and Applied Life Sciences, Niigata, Japan.

1998 Ph.D. in Pharmaceutical Chemistry – 1st Doctorate in Pharmaceutical Chemistry awarded by the University of Ibadan, Nigeria.

1994 Visiting Scientist, UCL School of Pharmacy, Brunswick Square, London, October, 1994 – January, 1995. British Council – sponsored Higher Education Link Programme.

1994 Best M.Sc. candidate (Pharmaceutical Chemistry, >70 weighted average)

1992 Federal Government of Nigeria Scholarship for Postgraduate training

1987 University Scholar, University of Ibadan & Faculty Best student award.

1985 Distinction in Biology & Best student in Biology, Advanced Level, West African Examinations Council (WAEC), Higher School Certificate, Baptist High School, Iwo, Osun State, Nigeria.

RESEARCH & DEVELOPMENT EXPERIENCE

- **Design & development of Planar Artificial Membrane Lipophilicity Assay *(*PAMLA*)*-**
  A novel assay that uses an engineered lipid device for lipophilicity profiling of small-molecule drugs.
  Device demonstrated better accuracy than prior-art (octadecylsilane layer) in biopharmaceutics modelling.
  Biomimetic attribute of device ensures validity of oral drug absorption simulated mecahnics.

  Design and development of PAMLA biodevice

- **Design & development of Computational Antioxidant Capacity Simulation (CAOCS) assay -**
  A novel kinetic assay, analytical framework and computational technology for phenolic antioxidant capacity profiling.
  Method holds considerable promise for biorelevant output and quality by design (QbD) of dietary supplements.

  Design &development of CAOCS assay kit.

- **Design and development of 4-carboxyl-2,6-dinitro benzenediazonium ion (CDNBD)-**
  A highly reactive and versatile aryl diazonium ion reagent for instrumental chemical analysis (absorption spectroscopy & liquid chromatography)
  A highly reactive and versatile synthetic intermediate for organic synthesis.

  Design & development of CDNBD assay kit.

- **Design and synthesis of 4-carboxyl 2,6-dinitro phenylazo hydroxynaphthalenes (CDNPAHNP's)-**
  A new class of CDNBD-derived, functionalized and potential non-toxic (azo dyes) colour additive.

- **Veterinary Pharmacy & Ethnopharmacology -**
  Investigation of medicinal plants with folklore claims of usefulness as anthelmintics in the management of helminthosis of livestock.
- Qualification/validation of analytical methods
- Over 50 scientific publications/abstracts
- Creative writing and oral presentation skills
- Pharmacist Council (Nigeria) Certified Professional
- Member, American Chemical Society (ACS)

AREAS OF EXPERTISE

- **Mathematical chemistry.** Mathematical modeling of chemical phenomena is undertaken to aid process understanding, simulation of biological process, leading to development biorelevant assays.

- **Development of pharmaceutical assay technologies**. Variety of techniques, including spectroscopy chromatography and micro-volumetric analysis are explored in developing assay technology platforms. The assay technologies are useful for routine quality control purposes or biorelevant assays for pharmaceutical profiling.

- **Manufacturing science of quality-assured active nutraceutical ingredients (ANI).** Quality-by-design (QbD) techniques of manufacturing science are adopted to prepare ANI's from plant extracts that are rich in bioactive phytochemicals. This invariably requires mathematical modeling of phytochemical reactivities, identification of critical quality attribute (CQA) and characterization of critical process parameters (CPP).

- **Molecular engineering**. In particular, mathematical modeling was applied to a popular organic chemistry reaction: "hydrolysis of aryl diazonium salt". Identification of critical-to-quality (CTQ) parameters enabled the optimal synthesis of a crystalline form of a very reactive aryl diazonium. The diazonium is a versatile reactive, which is currently undergoing extensive development as a specialty chemical.

MANAGEMENT & LEADERSHIP EXPERIENCE IN CAPACITY BUILDING

- University-based academic administration
    - A total of 5 years of serving as Acting HoD, Department of Pharmaceutical Chemistry, University of Ibadan, Nigeria.
- Mentoring of junior academics
    - Mentored and supervised at postgraduate level >50% (5 out of 9) of current academic staff in the Department of Pharmaceutical Chemistry, University of Ibadan.
- Supervised **over 35** dissertations/thesis (comprising 16 undergraduate (B. Pharm. Candidates), 16 M.Sc. candidates, 4 Postgraduate diploma and co-supervised 1 doctoral thesis**)**
- Collaborate with senior academics within the University of Ibadan in facilitating doctoral research across several disciplines (including Veterinary Parasitology, Veterinary Pharmacology, Food Technology and Biochemistry)
- Currently supervising **4** postgraduate students (4 Doctoral candidates,)
- **Most inspiring teacher of the year** award– 2005 (Opinion poll of Pharmacy graduating class, U.I.)
- **Most favourite teacher of the year** award - 2010 (Opinion poll of Pharmacy graduating class, U.I.)
- Examiner (internal/external) of 11 Ph.D. thesis within the University of Ibadan over a period of 8 years (2006-2014) in Biochemistry, Pharmacognosy, Pharmaceutical Chemistry & Biophysical Chemistry.
- External examiner to Obafemi Awolowo University, Ile-Ife, Nigeria for B. Pharm. & M.Sc. (Pharmaceutical Chemistry) candidates.

- Consult with Pharmaceutical companies on drug analysis & product development.

PROFESSIONAL SERVICES TO THE SCIENTIFIC COMMUNITY AND THE PUBLIC

Ongoing	Member, American Chemical Society (USA).
Ongoing	Member, National Association of Pharmacists in Academia (NAPA), Nigeria.
Ongoing	Reviewer of manuscripts from: *The Canadian Journal of Chemical Engineering, JAOAC, Pharmaceutical Biology, etc…*
Ongoing	Internal/External examiner in Departments of Chemistry, Pharmaceutics & Industrial Pharmacy, & Pharmacognosy, University of Ibadan.
Ongoing	External Examiner in Pharmaceutical Chemistry, Obafemi Awolowo University, Ile-Ife (B. Pharm & M.Sc. candidates)
Ongoing	Reviewer, Institutional ReviewBoard, UI/UCH Ethics Committee.

RESEARCH GRANTS

2011 **Biochemical Society, United Kingdom**
Guildford Bench Methodology Fund, ***Validating the biomimetic attributes of a novel lipophilicity assay*** (Co-applicant with Dr. Amos Fatokun, School of Biomedical Sciences, Nottingham University, UK).

2010 **University of Ibadan, Ibadan, Nigeria.**
Senate Research Grants, ***Computational antioxidant capacity simulation for selected polyphenols and dietary supplements.*** Grant #: SRG/FP/2010/2A

2006 **University of Ibadan, Ibadan, Nigeria.**
Senate Research Grants, Grant #:SRG/COM/2006/3A

2000 **University of Ibadan, Ibadan, Nigeria.**
Senate Research Grants, Grant #: SRG/COM/2000/21A

1996 **University of Ibadan, Ibadan, Nigeria.**
Senate Research Grants, Grant #:SRG/COM/1996/43A

1995 **University of Ibadan, Ibadan, Nigeria.**
Senate Research Grants, Grant #:SRG/COM/1994-95/39A

1994 **British Council, United Kingdom**
Visiting Scholar Grant, UCL School of Pharmacy, Brunswick Square, London, (British Council-sponsored, Ibadan-London, Link Programme).

PUBLICATIONS.

A. Process Understanding, Modelling & Simulation – *Innovative Chemistry & Chemoinformatics*.

1. **Idowu, S. O**. and Adeyemo, M. A. (**2016**). Computational antioxidant capacity simulation (CAOCS) assay of catechol, resorcinol and hydroquinone. Journal of Applied solution Chemistry and Modeling, 5 (3): 143-156. *DOI: 10.6000/1929-5030.2016.05.03.5*

2. Adeyemo, M. A. and **Idowu, S. O.** (**2016**). Correlation of lipophilicity descriptors with pharmacokinetic parameters of selected benzodiazepines. African Journal of Biomedical Research (*In Press).*

3. **Idowu, S.O**., Thomas, O.E., and Bioku, O.O. (**2015**). Modelling of 4-carboxyl-2,6-dinitrobenzene diazonium ion (CDNBD) hydrolysis through addition of water and alkaline buffer in a strongly acidic medium. Journal of Solution Chemistry 44:1501-1517. *DOI: 10.1007/s10953-015-0352-y*

4. **Idowu, S.O**. (**2014).** Computational antioxidant capacity simulation (CAOCS): a novel framework of antioxidant capacity profiling. Chemical Products and Process Modeling 9(1): 25 - 43. *DOI: 10.1515/cppm-2013-0041, (e-publication: Nov. 2013)*

5. **Idowu, S.O.,** Adeyemo, M.A. and Ogbonna, U.I. (**2009**). Engineering and validation of a novel lipid thin film for biomembrane modeling in lipophilicity determination of drugs and xenobiotics. Journal of Biological Engineering 3:14 (7 September, 2009) [Open acess:*http://www.jbioleng.org/articles/browse.asp*]

6. **Idowu, S.O.,** Adeyemo, M.A. and Itiola, A.J. (**2009**). Computational models for the determination of antioxidant capacity and phenolics in dietary supplements using real-time proton transfer kinetics data. Chemical Product and Process Modeling 4(1) ISSN (Online): DOI: http://dx.doi.org/10.2202/1934-2659.1385 (*http://www.degruyter.com/view/j/cppm.2009.4.1/cppm.2009.4.1.1385/cppm.2009.4.1.1385.xml)*

7. **Idowu, S.O.**, Adegoke, A.O., Idowu, A. and Olaniyi, A.A. (**2007**). Computational models for structure-hydrophobicity relationships of 4-carboxyl-2, 6-dinitrophenyl azo hydroxynaphthalenes. Journal of Association of Official Analytical Chemists International 90(1): 291-298.

8. **Idowu, S.O.,** Fasanmade, A.A. and Olaniyi, A.A. (**2002**). Evaluation of dimethylformamide (DMF) as an organic modifier in hydrophobicity index (R_m) determination. Tropical Journal of Pharmaceutical Research 1(2):83-89 (Available on: *http://www.tjpr.freehosting.net*)

B. Assay technologies - *reagent design, assay development and validation*

1. **Idowu, S.O. (2012**) pH-dependent molecular behaviours of a new potential color additive: 4{[6-(1-carboxyethyl)-2-hydroxy-1-naphthyl]diazenyl}-3,5- dinitro benzoic acid. Journal of Applied Solution Chemistry and Modeling, 1(2):105-112

2. Adegoke, A.O., Xiang, L.L., **Idowu, S.O.**, and Chen, D.Y. (**2012**). Highly sensistive liquid chromatographic analysis of artemisinin and its derivatives after pre-column derivatization with 4-carboxyl-2,6-dinitrobenzene diazonium ion. Acta Chromatographica 24(3): 445-462.

3. Aderibigbe, S.A., Adegoke, A.O., **Idowu, S.O**., and Olaleye, S.O. (**2012**). Sensitive spectrophotometric determination of aceclofenac following azo dye formation with 4-carboxyl-2,6-dinitrobenzene diazonium ion Acta Pol Pharm. 69 (2): 203-211.

4. Aderibigbe, S.A., Adegoke, A.O., and **Idowu, S.O.** (**2012**). A new colorimetric method for the determination of nifedipine tablets by derivatization using 4-carboxyl-2,6-dinitrobenzene diazonium ion. International Journal of Industrial Chemistry,3(5):1-8

5. Adegoke, A.O., Ogunleye, A.O., Lawal, O.T., **Idowu, S.O**. and Adeniyi-Akee, M.A. (**2010**). Antimicrobial properties of 4-carboxyl-2,6-dinitrophenyl azo hydroxynaphthalenes. African Journal of Microbiology Research, 4(22):2444-2450.

6. Adegoke, A.O., **Idowu, S.O.,** Daramola, O.P. and Ogunsanya, O.S. (**2010)**. Derivatization of artemisinin derivatives using 4-carboxyl-2,6-dinitrobenzenediazonium (CDNBD) ion.Acta Pharmaceutica Sciencia, 52(3):269-280.

7. Adegoke A.O. and **Idowu, S.O.** (**2010**)**.** Solvatochromic behaviours and strutcture-spectra relationships of 4-carboxyl-2,6-dinitrophenylazohydroxynaphthalenes. Spectrochimica Acta Part A: Molecular and Biomelecular Spectroscopy; 75:719-727.
8. **Idowu, S.O**., Adegoke, A.O., Adeniji, A.O. and Olaniyi, A.A. (**2009**). Colorimetric assay of naproxen tablets by derivatization using 4-carboxyl-2,6-dinitrobenzendiazonium ion East and Central African Journal of Pharmaceutical Sciences, 12:8-14

9. Adegoke, A.O., **Idowu, S.O.,** and Olaniyi, A.A. (**2008**). Synthesis and spectroscopic characterization of 4-carboxyl-2,6-dinitrophenylazo hydroxynaphthalenes. Dyes and Pigments 77: 111-117

10. Adegoke A.O., **Idowu, S.O**. and Olaniyi, A.A. (**2007**).Novel determination of nabumetone, a cox-2 inhibitor precursor via it's 4-carboxyl-2,6-dinitrobenzene diazonium (CDNBD) derived azo dye.Afr J Med Med Sci. 2007 Sep;36 (3):249-57.

11. Adegoke A.O., **Idowu, S.O**. and Olaniyi, A.A. (**2007**). Improved Colorimetric determination of reserpine in tablets using 4-carboxyl-2,6-dinitrobenzene diazonium ion (CDNBD). Tropical Journal of Pharmaceutical Research. 6(2):695-703

12. **Idowu, S.O**., Adegoke, A.O., Oderinu, B.A. and Olaniyi, A.A. **(2006**). Rapid colorimetric assay of diclofenac sodium tablets using 4-carboxyl-2,6-dinitrobenzenediazonium ion (CDNBD) Pakistan Journal of Pharmaceutical Sciences 19(2): 141-148

13. Adegoke, A.O., **Idowu, S.O.** and Olaniyi, A.A. (**2006)**. A new spectrophotometric method for the determination of Nadolol. Journal of the Iranian Chemical Society 3(3): 277-284

14. Adegoke, A.O., **Idowu, S.O**. and Olaniyi, A.A. (**2006**). Novel colorimetric assay of indomethacin using 4-carboxyl-2, 6-dinitrobenzenediazonium ion. Acta Pharmaceutica. 56: 189-202.

15. Kolade, Y.T., Adegbolagun, O.M., **Idowu, S.O.,** Babalola, C.P. and Olaniyi, A.A. (**2006**). Comparative determination of Halofantrine by Titrimetry, Spectrophotometry and Liquid Chromatography. African Journal of Medicine and Medical Sciences 35(1):79-84.

16. Adegoke, A.O., **Idowu, S.O**., M.O. Lawal and A.A. Olaniyi (**2005**). 4-Carboxyl-2, 6 dinitrobenzenediazonium ion (CDNBD): a new diazonium for the detection of phenol ether homologues. Journal of Pharmacy and Bioresources 2(2): 146-161.

17. **Idowu, S.O.,** Kolawole, A.O., Adegoke, A.O., Kolade, Y.T., Fasanmade, A.A. and Olaniyi, A.A. (**2005**). Kinetics of thermal decomposition of 4-carboxyl-2, 6-dinitrobenzenediazonium ion (CDNBD). Journal of Association of Official Analytical Chemists International 88 (4): 1108-1113.

18. **Idowu, S.O**., Adegoke, A.O. and Olaniyi, A.A. (**2004**). Colorimetric assay of Propranolol tablets by derivatization: Novel Application of diazotized 4-amino-3, 5-dinitrobenzoic acid (ADBA). Journal of Association of Official Analytical Chemists International 87(3):573-578.

19. **Idowu, S.O**. and Olaniyi, A.A. (**2003**). Some physicochemical properties of 4-amino-3, 5-dinitrobenzoic acid (ADBA). African Journal of Medicine and medical sciences 32:17-21.

20. **Idowu, S.O.,** Tambo, S.C., Adegoke, A.O and Olaniyi, A.A. (**2002**). Novel colorimetric assay of mefenamic acid using 4-amino-3, 5-dinitrobenzoic acid (ADBA). Tropical Journal of Pharmaceutical Research 1(1):15-22 (Available on: *http://www.tjpr.freehosting.net*)

21. **Idowu, S.O**.and Olaniyi, A.A. (**2001**) Evaluation of diazotized 4-amino-3, 5-dinitrobenzoic acid (ADBA) as a new derivatizing reagent. African Journal of Medicine and Medical Sciences 30: 217-220.

22. **Idowu, S.O**. and Olaniyi, A.A. (**2001**).1- (4-carboxyl-2,6-dinitrophenylazo)- 2-hydroxynaphthalene as a new pH indicator Journal of Phytomedicine and Therapeutics 6(2):108-115

C. Veterinary Pharmacy & ethnopharmacology (anthelmintic phytomedicine development) - *collaborative research at the Chemistry/Biology Interface*

1. Ademola, I.O., Fagbemi, B.O. and **Idowu, S.O. (2009).** Bioseparation and activity of *Khaya senegalensis* fractions against infective larvae of *Haemonchus contortus*. Vet. Parasitology; 165(1-2):170-4.

2. Adaramoye, O.A., Farombi, E.O., Nssien, M., **Idowu, S.O.,** Ademowo, O.G. and Adeyemi, E.O. (**2008**). Hepatoprotective activity of purified fractions from *Garcinia kola* seeds in mice intoxicated with carbon tetrachloride. J Med Food, 11:544-50

3. Ademola, I.O., Fagbemi, B.O. and **Idowu, S.O. (2007).** Anthelmintic activity of *Spigelia anthelmia* extract against gastrointestinal nematodes of sheep. Parasitol Res. 101(1):63-9.

4. Ademola, I.O., Fagbemi, B.O. and **Idowu, S.O. (2007).** Anthelmintic efficacy of *Nauclea latifolia* extract against gastrointestinal nematodes of sheep: *in vitro* and *in vivo* studies. African Journal of Traditional, Complimentary and Alternative Medicines. 4(2):148-156.

5. Ademola, I.O. and **Idowu, S.O.** (**2006**). Anthelmintic activity of *Leucaena leucocephala* Seed Extract against *Haemonchus contortus* infective larvae Veterinary Record 158 (14):485-486

6. Adedapo, A.A., Abatan, M.O., **Idowu, S.O**. and Olorunsogo, O.O. (**2005**). Toxic effects of Chromatographic Fractions of *Phyllanthus amarus* on the serum Biochemistry of Rats. Phytotherapy Research 19:812-815.

7. Ademola, I.O., Fagbemi, B.O. and **Idowu, S.O.** (**2005)**. Anthelmintic activity of *Spondias mombin* against Gastronintestinal Nematodes of sheep: Studies in vitro and in vivo. Tropical Animal Health and Production 37: 223-235.

8. Ademola, I.O., Akanbi, A.I. and **Idowu, S.O.** (**2005**). Comparative Nematocidal activity of Chromatographic fractions of *Leucaena leucocephala* seed against Gastrointestinal Sheep Nematodes, Pharmaceutical Biology 43 (7): 599-604.

9. Ademola, I.O., Fagbemi, B.O. and **Idowu, S.O.** (**2004**). Evaluation of the anthelmintic activity of *Khaya senegalensis* extract against gastrointestinal nematodes of sheep: in vitro and in vivo studies. Veterinary Parasitology 122:151-164.

10. Ademola, I. O., Fagbemi, B.O. and **Idowu, S.O**. (**2003**). Comparative *in vitro* studies on the efficacy of ivermectin against gastrointestinal sheep nematode. Tropical Journal of Pharmaceutical Research 2(2):235-238.

D Book /Book Chapters

1. Babalola, C.P. and **Idowu, S.O. (2005).** Drugs and Mankind. In: Science, Industry and Mankind, pp 39-54, Okonjo, K.O. and Bolarinwa, A.T. (Eds.,) General Studies Programme, University of Ibadan.

2. Olaniyi, A. A. and **Idowu, S.O.** (Ed.) (**1998**). Detection and Identification of Counterfeit and substandard pharmaceutical products-Proceedings of a training workshop (*6-10 July, 1998*) Department of Pharmaceutical Chemistry, Faculty of Pharmacy, University of Ibadan.

E. Published Conference Abstracts

1. **S.O. Idowu** (**2014**). Computational Antioxidant Capacity Simulation (CAOCS): A new look at antioxidant capacity profiling. Conference Programme and Book of Abstracts, Biotechnology for Health and Sustainable Development, 4th Unibadan Conference of Biomedical Research, *Plenary Lecture* 11, July 1- 4, University of Ibadan, Ibadan, Nigeria.

2. **S.O. Idowu,** M.A. Adeyemo, and A.A. Fatokun (**2012**). Biomimetic attributes of novel lipophilicity assay affords reliable prediction of biopharmaceutical profile of small-molecule drugs, Conference Programme and Book of Abstracts, Biotechnology for Health and Sustainable Development, 3rd Unibadan Conference of Biomedical Research, *Plenary Lecture* 6, p33, July 24 – 27, University of Ibadan, Ibadan.

3. M.A. Adeyemo, and **Idowu, S.O.** (**2012**). Film thickness consistency of an engineered planar artificial membrane biodevice for novel lipophilicity assay. Conference Programme and Book of Abstracts, Biotechnology for Health and Sustainable Development, 3rd Unibadan Conference of Biomedical Research, Abstract OPB10, p56, July 24 – 27, 2012, University of Ibadan, Ibadan, Nigeria

4. A.N. Ogedengbe, S.A. Aderibigbe, I.O. Ademola and **S.O. Idowu** (**2012**). A new anthelmintic assay using mathematical modelling of *Haemonchus placei* adult worm motility test data. Conference Programme and Book of Abstracts, Biotechnology for Health and Sustainable Development, 3rd Unibadan Conference of Biomedical Research, Abstract OPC 29, p83, July 24 – 27, University of Ibadan, Ibadan, Nigeria.

5. S.A. Aderibigbe, A.N. Ogendengbe, I.O. Ademola, and **S.O. Idowu.** (**2012**). Optimizing solvating power-predicting variables of incubation medium in *Haemonchus placei* adult worm motility anthelmintic assay. Conference Programme and Book of Abstracts, Biotechnology for Health and Sustainable Development, 3rd Unibadan Conference of Biomedical Research, Abstract PP17, p93, July 24 – 27, University of Ibadan, Ibadan, Nigeria.

6. **S.O. Idowu** and M. A. Adeyemo (**2010**). Engineering a biomimetic artificial membrane for lipophilicity profiling of drugs and xenobiotics. 2nd Unibadan Biomedical Conference (July, 2010), Biotechnology for Health and Development; Conference Programme and Book of Abstracts, Abstract A1-1, University of Ibadan, Ibadan, Nigeria, p46.

7. **S.O. Idowu** and G. Domchak (**2009**). Prediction of Pharmacokinetic drug-herb interaction using a Physicochemical Mechanistic model of Ciprofloxacin-Biflavonoid interaction. PhysChem and ADMET Profiling in Drug Research, The 4th Log P Symposium (February, 8-11, 2009). Programme and Abstracts, , Abstract PC-22, ETH, Zurich, Switzerland.

8. **S.O. Idowu,** M. A. Adeyemo, and A. J. Itiola. (**2008**) Computational models for antioxidant efficiency using real-time proton release kinetics data., 1st Unibadan Biomedical Conference (August, 2008) Biotechnology for Health and Development; Conference Programme and Book of Abstracts, Abstract A15, University of Ibadan, Ibadan, Nigeria, p44.

9. **S.O. Idowu,** U.I. Ogbonna, and M. A. Adeyemo. (**2007**). Engineering a phosphatide-enriched planar lipid layer for membrane permeability modeling, 121st AOAC International Annual Meeting and Exposition (September, 2007), Final Program, Abstract P-1014, Hyatt Regency Orange County, Anaheim, California U.S.A.

MANUSCRIPTS UNDER REVIEW / IN PREPARATION

1. Computational antioxidant capacity simulation (CAOCS) assay of *Garcinia kola* seed extracts. (*Under review).*

2. Computational antioxidant capacity simulation (CAOCS) and the prospects of two-dimensional (2D) assay *(In Preparation).*

3. Enhanced throughput of a screening anthelmintic assay using adult *Haemonchus placei* motility *(In preparation).*

UNIVERSITY TEACHING.

Courses taught at undergraduate level.

- PCH 201: Inorganic Pharmaceutical Chemistry
- PCH 202: Physical Pharmaceutical Chemistry I
- PCH 203: Organic Pharmaceutical Chemistry

- PCH 301: Physical Pharmaceutical Chemistry II
- PCH 303: Medicinal Chemistry I
- PCH 401: Pharmaceutical Analysis I
- PCH 402: Medicinal Chemistry II
- PCH 501: Pharmaceutical Analysis II
- PCH 502: Medicinal Chemistry II
- PCH 503: Principles of Drug Design.

Courses taught at postgraduate level.

- PCH 702: Classical and instrumental methods of drug analysis.
- PCH 706: Drug quality control methods.
- PCH 711: Advanced separation techniques in drug analysis.
- PCH 713: Experimental design in drug analysis.
- PCH 731: Evaluation of natural medicinal and dietary supplements.

CONTINUING PROFESSIONAL DEVELOPMENT:

American Chemical Society (ACS) Webinars - 2014 Drug Discovery Series.

1. Overview of the Drug Discovery and Deveopment Process - February 27, 2014 - Facilitators: Dr. Derek Lowe, Dr. Richaard Connell & Dr. Nicholas Meanwell.
2. Primer in Drug Target Classes - March 27, 2014 - Facilitators: Dr. John P. Overington & Dr. Molly Schmid
3. Key Concepts in identifying drug leads - April 24, 2014 - Facilitators: Dr. Tudor Oprea & Dr. Christopher Lipinski
4. Lead Optimization – Building Efficacy & Safety - May 29, 2014 - Facilitator: Dr. Craig Lindsley
5. Tips for IND and Starting Your Clinical Trials - 26 June, 2014 - Dr. Lynn Gold & Dr. John Morrison
6. The Role of Chemistry in Clinical Trials: The Big Expense & Lessons Learned - 31 July, 2014 - Facilitators: Dr. Graham Johnson & Jay Sisco.
7. Pharmacoeconomics and IP Strategies in Drug Development - 25 September, 2014 - Facilitators:Dr. Richard Willke & Dr. Robert Koch
8. Future of Drug Discovery – Challenges, Risks and Rewards - 30 October, 2014 - Facilitators: Dr. Jeff Zablocki & Dr. Richard Connell.

Merck / Biovia Webinar - 2014

Predictive Sciences: A Transformational Opportunity For Pharmaceutical Research And Development - Thursday 23 October, 2014
Facilitator: Chris Waller

Data Science Central / Tableau Software Webinar - 2015

The Beautiful Science of Data Visualization - 28 April, 2015 - Facilitator: Jeff Pettiross, (Hosted by Tim Matteson).

American Chemial Society (ACS) Webinars - 2015 Drug Design and Delivery Symposium

1. Designing better drug candidates - 29 January, 2015 - Facilitator: Dr. Paul Leeson
2. Strategies to improve solubility of drug candidates - 26 February, 2015 - Facilitator: Dr. Michael Walker

THESIS SUPERVISION - M.Sc. & Ph.D.

List of students that earned Ph.D.

Adegoke, Aremu Olajire (2005).
Novel colorimetric assays of some selected pharmaceutical phenol ethers using 4-carboxyl-2,6-dinitrobenzene diazonium ion (CDNBD).
UI, Ph.D. (Co-supervised with Prof. A.A. Olaniyi)
(Current position: Professor, Department of Pharmaceutical Chemistry, University of Ibadan.)

List of students that earned M.Sc.

Tambo, Ajong Cletus (2002)
Novel colorimetric assay of mefenamic acid using 4-amino-3,5-dinitrobenzoic acid (ADBA).
UI, M. Sc.

Aderibigbe, Segun Abidemi (2003)
Isolation and characterization of an anthelmintic proanthocyanidin from *Khaya senegalensis* (Melicaceae).
UI, M. Sc.
(Current position: Lecturer I, Department of Pharmaceutical Chemistry, Faculty of Pharmacy, UI)

Igwe, Michael Ukandu (2003)
Novel spectrophotometric assay of GB1a a marker compound in Garcinia kola seed extract using diazotized 4-amino-3'5-dinitrobenzoic acid (ADBA).
UI, M. Sc.

Oderinu, Bolaji Aduke (2003)
Novel colorimetric assay of diclofenac sodium tablets using diazotized 4-amino-3,5-dinitrobenzoic acid (ADBA).
UI, M. Sc.

Adiukwu, Chukwuemeka Paul (2003).
Isolation and purification of kolaflavanone and GB1 in Garcinia kola seed.
UI, M. Sc.

Kotila, Olayinka Adejoke (2006)
Design, Synthesis, and spectroscopic analysis of AZ-NPA01 as a new chrompophoric labelling agent.
UI, M. Sc.

(Current position: Lecturer I, Department of Pharmaceutical Chemistry, Faculty of Pharmacy, UI)

Omoyeni, Olubunmi Adenike (2006).
Kinetics of thermal decomposition of 6-hydroxyl-5-(4-carboxyl-2,6-dinitrophenyl azo)-naphthalene-2- (propan-2-oic acid).
UI, M. Sc.

Idowu, Jemilat Omowumi (2006).
Physicochemical properties of Leucaena leucocephala (Lam. De. Wit) Seed Oil.
UI, M. Sc.

Bioku, Olusola Olusegun (2006)
Modelling electrophilicity of 4-carboxyl-2,6-dinitrobenzenediazonium ion (CDNBD) using hydroxyl ion as nucleophile.
UI, M. Sc.

Thomas, Olusegun Emmanuel (2009).
Modelling the anaomalous ionization process of selected arenediazonium ions as a predictive tool for optimal organic synthesis.
UI, M. Sc.
(Current position: Lecturer I, Department of Pharmaceutical Chemistry, Faculty of Pharmacy, University of Ibadan).

Adeyemo, Morenikeji Ayodele (2011)
Film thickness consistency of an engineered planar artificial membrane biodevice for lipophilicity assay.
UI, M. Sc.
(Current position: Lecturer II, Department of Pharmaceutical Chemistry, Faculty of Pharmacy, University of Ibadan).

Obe, Oluwaranti Temitope (2012)
Computational antioxidant capacity simulation: a framework of novel antioxidant capacity profiling for polyphenols and phenol-like small molecules.
UI, M. Sc.

Alor, Stella Uzoamaka (2014)
Reliability analysis of an engineered biodevice for novel lipophilicity assay.
UI, M. Sc.

Oluwateru, Mary Funsho (2014)
A framework and model system to predict exposure toxicity risk associated with xenobiotics of sawdust origin.
UI, M. Sc.

Ekpe, Godwin Polycarp (2015)
Hydrolysis modelling of selected aryl diazonium ions through addition of water and alkaline buffer in a strongly acidic medium.
UI, M. Sc.

Chukwudulue, Uche Maryann (2015)
Hydrolysis modelling as a prelude to optimal synthesis and isolation of 4-carboxyl-2,6-dinitrobenzene diazonium hexafluorophosphate (CDNBD PF_6).
UI, M. Sc.

Are-Daniel, Obehi (2015)
Optimized design of a novel functionalized activated charcoal for solid phase extraction (SPE) through covalent grafting of 4-carboxyl-2,6-dinitrobenzene diazonium ion (CDNBD).
UI, M. Sc.

Omotayo, Oluwabukola Idowu (2016)
Computational antioxidant capacity simulation (CAOCS) assay of *Garcinia kola* seed and extracts.
UI, MSc.

List of current Ph.D. students.

- Aderibigbe, Segun Abidemi
  Bioactivity, structural and toxicity profiling of anthelmintics isolated from *Nuclea latifolia* leaf.

- Ogedengbe, Abosede Nkechinyelu
  Bioactivity, structural and toxicity profiling of anthelmintics isolated from *Spondias mombin* leaf.

- Adeyemo, Morenikeji Ayodele
  Validity, reliability and testability of an engineered biodevice for novel lipophilicity assay.

S.O. Idowu, Ph.D.