

# PETER UCHENNA AMADI

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Department of Biochemistry, Imo State  
University, Owerri, Imo State, Nigeria

## EDUCATION

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- PhD** University of Port Harcourt, Choba, Biochemistry Feb, 2020  
*Dissertation: "Cardiometabolic effects of selected traditional therapies in preclinical and clinical settings"*  
Committee: Professor A.A Okerengwo (chair)  
Professor E.N. Onyeike  
Professor B.W. Abbey
- MSc** University of Port Harcourt, Choba, Biochemistry Sept, 2016  
*Thesis: "Management of diabetes-induced preeclampsia using traditional diets and therapies"*  
Advisor: Professor A.A. Uwakwe
- BSc** Imo State University, Biochemistry Sept, 2011  
Graduated with Second Class, Upper Division

## HONOURS AND AWARDS

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- Visiting Scholar 2022  
**University of Alberta Canada – Department of Pediatrics**  
Topic: Molecular probity of walnut modulation of PCSK9 signalling downstream  
Supervisor: Assoc. Prof. Dawei Zhang  
Sponsor: Tetfund AST&D Scholarship
- Visiting Fellowship Award 2022  
**Cambridge University, UK – Institute of Metabolic Science**  
Topic: Investigating the incretin-effect of Dacryodes edulis seed  
Host – Professor Fiona Gribble and Frank Reimann  
Sponsor: Cambridge University Alborada Funding
- Visiting Fellowship Award 2021  
**Oxford University, UK - James & Lillian Martin Centre for Stem Cell Research.**  
Topic: Studying glucose homeostasis in progenitor cells during viral infection  
Host – Professor William James - Director, Centre for Stem Cell Research  
Sponsor: Africa-Oxford Partnership (AFOx)
- Fellowship Award 2019  
**Biochemistry, National Institute of Nutrition, Hyderabad, India**  
Host – Professor Bhanuprakash Reddy – Scientist G  
Sponsor: ICMR – African Union of Scientific and Technical Research Commission

## RESEARCH EXPERIENCE

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NATIONAL INSTITUTE OF NUTRITION, HYDERABAD, INDIA 2019

### Laboratory Skills Acquired

- Radioimmunoassay
- Enzyme Linked Immunosorbent Assay
- Chromatography; HPLC, GC-MS

## RESEARCH TRAININGS

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OXFORD UNIVERSITY, UK; Prof. William James Lab (Virtual) 2021 **(Awarded)**

Start date: October - November, 2021

### Laboratory Skills To be Acquired

- Cell culture techniques
- DNA methylation assay
- Immunoblotting techniques and In-vitro Kinase Assay

UNIVERSITY OF ALBERTA, CANADA; Dr. Dawei Zhang's Lab 1 year **(Awarded)**

Tentative Start Date: December, 2021

### Laboratory Skills To be Acquired

- Cell culture and immunoblotting techniques
- RNA isolation and real-time RT-PCR
- LDL-uptake using Zeiss Inverted Microscope
- Plasmid transfection and luciferase reporter assay

CAMBRIDGE UNIVERSITY, UK; Prof. Fiona's Lab January 2022 **(Awarded)**

Duration 4 weeks: Funded by Cambridge-Alborada Award

### Laboratory Skills To be Acquired

- Cell culture techniques and Cell imaging
- Transcriptomics, Immunoassays and LC-MS

## TEACHING EXPERIENCE

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Imo State University, Owerri

May 2019 to date

Assistant Professor, Biochemistry

*Undergraduate Courses taught so far (Minimum class size of 200 students)*

- Metabolic Regulation (coordinator) – Topics: metabolic regulation of fats and carbs
- Genetic Engineering and molecular biology – Topics: the genetic code and its relationship to cellular functions - Replication, transcription, translation
- Adv. Biochem Methods – Topics: Immunoassays and spectrophotometry
- Lipid Biochemistry (Coordinator) – Topics: Breakdown and synthesis of lipids
- Biochemical Reasoning – Research design and inference drawing
- Membrane Biochemistry (Coordinator) – Membrane structure and functions, Membrane transport system - active versus passive transport systems
- Nutrition Biochemistry – Proximate analysis, food contaminants
- Carbohydrate biochemistry – Metabolism of Carbohydrates

### Duties

- Developed course materials, administered lectures and graded exams
- Revised the syllabus to meet accreditation standards
- Coordinated grading and labs

## **Postgraduate Courses taught**

### Master's degree program

- Advanced intermediary metabolism (coordinator) – Topics: - Carbohydrate and lipid metabolism and their regulation, the interrelationship of metabolic pathways, genetic aspects of metabolism, vitamins and coenzymes, disorders of metabolism, use of isotopes in metabolic studies

### Doctoral degree program

- Membrane Biochemistry – Topics: Fractionation of subcellular organelles, role of organelles in cellular homeostasis, role of organelles in metabolism of foreign compounds.
- Advanced Endocrinology (coordinator) – Topics: Site of action and mechanism of action of hormones, recent advances in endocrinology

## **Duties**

- Developed course materials, administered lectures and graded exams
- Revised the syllabus to meet accreditation standards
- Coordinated grading and labs

## **Masters Students Advised**

- Ogechi Amamaasi, “Vascular effects of aqueous, glycoside, and phenolic acid extracts of *Tetracarpidium conophorum* (Black Walnut) during doxorubicin-induced vascular dysfunction”, 2021
- Chinweuba Nwaekpe, “Metabolic effect of *Persea americana* seed extract in cultured rat insulinoma (MIN6) cell lines”, Ongoing.
- Cynthia Amadi, “Activities of vascular integrity biomarkers from Diseased HPAEC – Diabetes Type II cell lines incubated with *Dacryodes edulis* seed methanolic extract”, Ongoing

## **Imo State University, Owerri**

May 2015 to May 2019

### **Research Assistant, Biochemistry**

- Development of designs for nutrition, and medical related scientific studies.
- Supervision and implementation of assigned field research.
- Preparation & standardization of reagents for research bench works.
- Conducting chronic toxicity tests to establish the value of LD<sub>50</sub>
- Statistical analysis of experimental data and any other related duty.
- Scientific report writing and correspondence in peer-reviewed journals.

## **OTHER POSITIONS IN IMO STATE UNIVERSITY**

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Account Manager – Jes-MRC-NIHR Grant Awarding Platform	2020 – Date
Secretary – Postgraduate Board of Biochemistry Department	2019 – Date
Unit Head/Adviser – Year 2 Undergraduate Program	2019 – Date
Secretary – Institutional Ethical Review Committee	2019 – Date
Lead – Community engagement and responsibility officer	2019 – Date
Grants Officer – US-GOV NIH Grant Awarding Platform	2019 – Date

## OTHER WORK EXPERIENCE

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NIPDS Supervisor/Health Educator (Immunization), World Health Organization, Aboh-Mbaise L.G.A Imo 2009-2012, 2016

- Oversee the functionality of my team, ensuring adherence to assigned roles
- Responsible for balancing, signing and conformation of the tally work tally sheets.
- Liaise with the focal persons to ensure adequate coverage and correspondence to assigned territory.

## CURRENT INTERNATIONAL GRANTS

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Title: Investigating the incretin-effect of *Dacryodes edulis* seed £19,780.62

Role: Principal Investigator

Scheme: 2021 Cambridge-Alborada Research Funding

Duration: 2022 - 2023

Collaborators: Professors Fiona Gribble and Frank Reimann (University of Cambridge, UK)

Title: Preclinical evaluation of bioprocessed indigenous foods for the management of gestational diabetes USD 83,613.00

Role: Principal Investigator

Scheme: GC Africa Round 12 Food Security and Nutrition Call 2020

Duration: 2021-2023

Collaborators: Dr Michael Bhebhe (Midlands State University, Zimbabwe)  
Dr Esienanwan Efiog (Federal University, Lafia, Nigeria)  
Dr. Christiana Nsiah-Asamoah (University of Cape Coast, Ghana)  
Mr. Teshome Bekele Elema (Arsi University, Ethiopia)

Title: Molecular probity of walnut modulation of PCSK9 signalling downstream USD 36,937.60

Role: Principal Investigator

Scheme: Tetfund AST&D Intervention

Duration: 2022 - 2023

Collaborator: Professor Dawei Zhang (University of Alberta, Canada).

## CURRENT GRANTS FROM NATIONAL/INSTITUTIONAL FUNDING

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Scheme: 2021 Institution Based Research USD 22878.94

*Status: Successful at Institutional Review – Awaiting Funding from Funders.*

1. Stimulation of glucose transport membrane associated proteins as an anti-diabetic mechanism of *V. doniana* (Prince Odika – PI; Peter Amadi –Co-researcher)
2. Cardiovascular effects of avocado pulp during L-NAME-induced vascular dysfunction (Joy Amadi – PI; Peter Amadi –Co-researcher)
3. Clinical Assessments of COVID-19 Survivors from Poor Resource Settings; are adjuvants required? - CACOPRES-1 (Oluchi Aloy-Amadi – PI; Peter Amadi –Co-researcher)
4. Preclinical testing of walnut concentrate on modulators of lipoprotein homeostasis in hypertensive-hypercholesterolemic rats (Peter A. Akah – PI; Peter Amadi –Co-researcher)
5. Pregnancy outcomes of *P. falciparum*-parasitized dams treated with alkaloids from *Azadirachta indica* (Chinyere Ukaga – PI; Peter Amadi –Co-researcher)

## RESEARCH PROJECTS

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*Title: Modulatory effect of walnut concentrate on lipid profile of hypertensive-hypercholesterolemic rats. 08/2021 - 12/2021*

Role: Principal investigator. This project was initiated, and developed by me, and the implementation will be coordinated by me. The project is still ongoing. I am responsible for the smooth running of the project. I obtained the ethical approval, secured the consumables for the first phase of the study, and will undertake the last phase of the study at the University of Alberta, Canada.

*Title: Insulinotropic effect of D. edulis seed decoction. 04/2021 - 04/2022/11/2022*

Role: Principal investigator. This project was initiated and developed by me, and the implementation will be coordinated by me. The project is still ongoing. I am responsible for the smooth running of the project. I obtained the ethical approval, secured the consumables for the pilot phase of the study, and have applied to undertake the last phase of the study (incretin-effect) in collaboration with Professors Fiona Gribble and Frank Reimann under the Cambridge-Alborada Research Funding.

*Title: Vasoprotective tendencies of valorized indigenous foods. 08/2020 - 08/2021*

Role: Principal investigator. This project was initiated, developed, implemented by me. I was majorly responsible for the coordination of the project which involves modification of indigenous foods to attain superior nutrient and organoleptic properties and its preclinical trial on models of hypertension and hypercholesterolemia.

*Title: Cardiometabolic profile of malarious dams subjected to antimalarial herbs 06/2019 - 05/2020*

Role: Principal investigator together with Professor Chinyere Ukaga. This project was jointly initiated, developed, and the implemented by both PI's. The development of exoerythrocytic models of gestational malaria was overseen by Prof. C. Ukaga.

*Title: Modulation of glucose homeostasis and pregnancy outcomes in obesity-induced insulin resistant dams using avocado seed polyphenols 06/2019 - 08/2020*

Role: Principal investigator. This project was initiated, developed, and implemented by me. I acquired the consumables, coordinated the project time and delivered the output of the research in line with the projects' time frame.

*Title: Effects of supplementing first-line hypertension treatments with African walnut on LDL homeostasis of hypertensive labourers 05/2019 - 08/2021*

Role: Principal investigator. This project was initiated, developed, and implemented by me. The recruitment of study participants, application of inclusion and exclusion criteria, and administration of test compounds was overseen by me. Analysis of samples in the laboratory was coordinated and implemented by me.

*Title: Preclinical trial of bioprocessed cassava in diabetic and insulin resistant rats. 07/2019 - 12/2021*

Role: Principal investigator. This project was an interfaculty research led by me from the Biochemistry Department, with contributions from Nutrition and Dietetics, and Microbiology Departments. This project was initiated and developed by me, and the implementation is in progress, as overseen by me. In collaboration with PIs from the Nutrition Department, I coordinated the modification of indigenous foods to attain superior nutrient and organoleptic properties and I am presently concluding its preclinical trial on models of T2DM. The food was found to have cardiomodulatory effects and is currently being explored.

*Title: Biochemical response of anemic offspring of diabetic dams to bioprocessed local food. 05/2019 - 02/2020*

Principal investigator. This project was initiated, developed, and implemented by me.

*Title: Metabolic modulation by okra diet during insulin resistance 10/2019-10/2021*

Role: Co-Principal Investigator. This project was initiated by another project team member, but developed by me, and the implementation was coordinated by me. I was responsible for the day to day running of the project activities in the lab and the achievement of the project deliverables.

## **PUBLICATIONS**

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**H-index: 20** Google Scholar

### ***Journal Papers in Review***

**Amadi P.U.**, et al (2022). Dietary inclusion of okra meal stimulates incretin production in diabetic patients. *Journal of the Science of Food and Agriculture*, JSFA-21-3546

**Amadi P.U.** et al (2022). Preclinical trial of *D. edulis* seeds for the management of preeclampsia. *Chronic Diseases and Trans Medicine*, Elsevier, CDTM-D-21-00069

**Amadi P.U.** et al (2022). Efficacy of using walnuts as statin adjuvants in hypertension management. *The American Journal of Cardiology*, CRCD-D-21-01411

### ***Journal Publications***

1. **Amadi, P. U.**, Agomuo, E. N., Ukaga, C. N.. (2021). Preclinical Trial of Traditional Plant Remedies for the Treatment of Complications of Gestational Malaria. *Medicines*, 8(12), 79. PMID: 34940291 PMCID: PMC8703497
2. Joy A. Amadi, **Peter U. Amadi**, et al (2021). Potentiation of incretin hormones and modulation of metabolic enzymes as possible mechanisms behind the insulin sensitizing effects of cabbage-metformin treatment. *Translational Research*, 225;S1931-5244(20)30249-8 **PMID: 33115637**.
3. Joy A. Amadi, **Peter U. Amadi**, et al (2021). Lettuce-avicularin treatment reverses insulin resistance via stimulation of glycolytic kinases and insulin signaling molecules. *IJBMS*, 24, 1-5. **PMID: 33953863 PMCID: PMC8061317**
4. Iheka, C., Osuoha, J.O., Archibong, I. **Amadi, P.** and Adeoti O. (2021). Solanum Fruit Juice as a Natural and Sustainable Source of Antioxidants for Patients with Chronic Hepatitis C under Antiviral Therapy *Gazi Medical Journal Supplement*, Vol. 32 No. 2A
5. Joy A. Amadi, **Peter U. Amadi**, et al (2020). Okra modulates regulatory enzymes and metabolites of glucose utilizing pathways in diabetic rats. *Journal of the American College of Nutrition* 39(8), 1-10. **PMID: 33031022**.
6. **Amadi, P. U.**, Agomuo, E. N., & Adumekwe, C. (2020). Vascular Effects of Avocado Seed Glycosides during Diabetes-induced Endothelial Damage. *Cardiovascular & hematological disorders drug targets*, 20(3), 202–213. **PMCID: PMC8226154**.
7. **Amadi, P. U.**, Agomuo, E. N., & Adumekwe, C. W. (2020). Modulatory properties of cardiac and quercetin glycosides from *Dacryodes edulis* seeds during L-NAME-induced vascular perturbation. *Journal of basic and clinical physiology and pharmacology*, 31(5), 1-8 **PMID: 32653874**.

8. Uche C. Njoku, **Peter U. Amadi**, Joy A. Amadi (2020). Nutritional modulation of blood pressure and vascular changes during severe menstrual cramps. *J Taibah Univ Med Sci*, Elsevier. 16(1): 93–101 **PMCID: PMC7858019 PMID: 33603637**.
9. Njoku UC, **Amadi PU**, Agomuo EN, Bhebhe M. (2020). The Relationship between Pain and Vascular Function Biomarkers in Dysmenorrheal University Students. *Chonnam Med J*. 56(3):186-190. **PMID: 33014757; PMCID: PMC7520371**.
10. **Amadi P.U.** and Agomuo E. (2020). Biochemical Implications of Biotransformation of Some Toxic Floras Using Natural Local Enzyme Sources, *Recent Pat Biotechnol* 14(1):16-32 **PMID: 31438835**
11. Agomuo E.N., **Amadi P.U...** (2019). Gestational geophagia affects nephrocardiac integrity, ATP-driven proton pumps, renin-angiotensin-aldosterone system and F2-isoprostane status. **Medical Sciences, 7(2). pii: E13. PubMed I.D: 30678242**
12. Agada Adaeze, and **Peter Uchenna Amadi** (2019). Nutritional, phytoconstituents, and free radical scavenging potentials of *Cola lepidota* K. Schum. and *Irvingia gabonensis* (Aubry-Lecomte ex O'Rorke) Baill. Leaves, *Brazilian Journal of Biological Sciences* 7(15):43-57 DOI: 10.21472/bjbs(2020)071505
13. Mercy O. Ifeanchi, Shedrack Chinedu Ogunwa, **Peter Uchenna Amadi** (2019). Phytochemical Composition of *Vitex doniana*, *Analytical Chemistry Letters*, **Taylor and Francis**, 9(6):863-875 DOI: 10.1080/22297928.2020.1722221
14. Bob-Chile Agada Adaeze, and **Peter Uchenna Amadi** (2019). Evaluation of Bioactive Component, Free Radical Scavenging Potentials and Protein Qualities of *Gomphrena celosoides* and *Zea mays* Leaves. *Current Bioactive Compounds* 15(7), 1-5
15. **Amadi Peter Uchenna**, Ogunka-Nnoka Charity, and Bene Willie Abbey. (2018). Properties of oils from plantain pseudostem biotransformed using crude local enzyme sources: a comparison of poultry feed oil, *Recent Patents on Food, Nutrition & Agriculture*, 10:1-12. **PubMed I.D: 30556509**
16. **Amadi Peter Uchenna**, Ogunka-Nnoka Charity, and Bene Willie Abbey. (2019) Effect of simultaneous snail slime-aided degradation and yeast fermentation on terpenoid composition of plantain pseudostem waste, *Current Pharmaceutical Biotechnology*, **PubMed I.D 30961480**
17. Bob Chile-Agada Adaeze, **Amadi Peter Uchenna**, and Lele Kelechi (2019). Bioactive Components, Protein Quality and in vitro Antioxidant Properties of Leaves of Two Medicinal Ornamental Plants. *Asian Journal of Pharmaceutical and Health Sciences*, 9(1), 2035-2045.
18. Agomuo, E.N. and **Amadi P.U.** (2019). Swimming pools quality risk assessment for heavy metal deposition and intake via oral and dermal exposure. *Environ Anal Health Toxicol* 34(3): e2019008, **PubMed ID: 31771317**
19. Agomuo, E.N. and **\*Amadi, P.U.** (2018). Nutritional and antioxidant properties of oils from selected bagasse, agricultural residues, and fodders. *Journal of American College of Nutrition*, **Taylor and Francis**, 38(2):132-140. **PubMed I.D: 30052146**
20. **Amadi Peter Uchenna**, Ogunka-Nnoka Charity, and Bene Willie Abbey. (2018). Biotransformation of plantain pseudostem fibres using local enzyme sources; analysis

- of their potential as commercial poultry feed. *Biocatalysis and Biotransformation*, **Taylor and Francis**, 37(3):224-232 Doi: **10.1080/10242422.2018.1532412**
21. Agomuo, E.N. and **Amadi P.U.** (2018). Accumulation and Toxicological Risk Assessments of Heavy Metal Depositions at Top Soils of Automobile Workshops in Imo State. *Acta Chemica Iasi* 26(1):21-44
  22. **Amadi, P.U.**, Agomuo, E.N., Bob-Chile Agada, A., Njoku, U.C., Ifeanacho, M.O., Okereke, C.J., Iheka, C.U. and Osuoha, J.O. (2018). Toxicities selected medicinal plants, and floras of lower phyla. *Alexandria Journal of Medicine*, **54**; **587-596**
  23. Amadi, B.A., Peters, D.E., Agomuo, E.N. **Amadi, P.U.** and Denson, G.O. (2018) Nutrient composition of some selected diets of Ijaw people of Bayelsa state. *Polish Journal of Natural Sciences*, 33(1):59-74
  24. Uche C. Njoku, Benjamin A. **Amadi Peter U.** Amadi, Onyebuchi E. Ezendiokwere, Idongesit E. Archibong (2018). Biochemical effects of matured stem extract of *Opuntia dillenii* in male Wistar rats, *Journal of Biomedical and Clinical Research*, De Gruyter, 11(1), 49-51
  25. Alozie S. Chidi, Wegwu O. Matthew, Amadi A. Benjamin, **Peter Uchenna Amadi**, and Njoku Uche Chinedu. (2018). The Modulatory Activity of *Justicia carnea* in Plasmodium Infected Mice. *Trends Journal of Sciences Research* 3(4):151-160 DOI: 10.31586/Biochemistry.0304.02
  26. Agomuo E.N. and **Amadi P.U.** (2018) Nutritional Properties of Oils from Various Parts of Three Varieties of Pears Consumed in South East Nigeria, *Acta Universitatis Cibiniensis, Series E : Food Technology*, Degruyter, 22 (2), Vol. XXII (2018), no. 2 10.2478/aucft-2018-0007
  27. E.N. Agomuo, \*M.K.C. Duru, B. A. Amadi, **P. U. Amadi**, and P.C. Ugwokaegbe (2017). Effect of caffeine on some selected biochemical parameters using rat model. *Advances in Biology*, **Hindawi Publishing Corporation**, Volume 2017, Article ID 9303276, 8 pages. DOI: doi.org/10.1155/2017/9303276
  28. Agomuo Emmanuel, **Amadi Peter**, Ogunka-Nnoka Charity, Amadi Benjamin, Ifeanacho Mercy, and Njoku Uche (2017). Chemical Composition of *Duranta repens* Leaf and Seed Oils. *OCL Lipids, Oil Seeds & Crops*, 24(6), 1-8.
  29. Agomuo, E.N., **Amadi, P.U.**, Iheka, C.U. and Duru, M.K. (2017). Impact of different processing methods on the micronutrient properties of selected legumes consumed in Eastern Nigeria, *International Journal of Biological Research*, **5** (1), 10-14.
  30. C. U. Ogunka-Nnoka, **P. U. Amadi**, P. C. Ogbonna and P. O. Ogbegbor (2017). Assessment of the Protein Quality and Mineral Bioavailability of *Dacryodes edulis* Seed and Seed Coat Mixture, *Journal of Scientific Research & Reports*, 14(1): 1-11.
  31. Charity Ogunka-Nnoka, Benjamin Amadi, Emmanuel Agomuo and **Peter Amadi** (2017). Ameliorative Effects of Some Natural Blood Boosters on Cyclophosphamide-induced Anemia in Rats. *Journal of Applied Life Sciences International*, 10 (3): 1-11.
  32. C. U. Ogunka-Nnoka, R. Amagbe, B. A. Amadi, and **P. U. Amadi** (2017). Biochemical Effects of *Telfairia occidentalis* Leaf Extracts against Copper-induced Oxidative Stress



- and Histopathological Abnormalities. *Journal of Advances in Medical and Pharmaceutical Sciences*, 12(2), 1-15. DOI: 10.9734/JAMPS/2017/31295
33. Amadi Benjamin, Ogunka-Nnoka Charity, Ogaji Miebaka, and **Amadi Peter**. (2017) Nutrient Composition and Biochemical Effects of *Cocos nucifera* Products on Alloxan-induced Diabetic Wistar Rats. *International Journal of Medicine*, 5(2), 149-157.
34. Ogunka-Nnoka, **P.U. Amadi**, E.C. Ikediashi, A. Nchendo & P. Ugochukwu (2017). Nutrient composition of *Dacryodes edulis* seed and seed coat mixture C.U. *PhytoChem & BioSub Journal*, 11(2), 81-88. DOI:10.163.pcbsj/2017.11.-2.-81
35. Amadi Benjamin, Duru Majesty, Agomuo Emmanuel, **Amadi Peter**, and Onedibe Ozioma. (2016). Nutritional, Phytochemical and Sensory Evaluation of “Mberiagworagwo” Traditional Food of Uruagunnewi People in Anambra State, Nigeria. *Journal of Advances in Biology & Biotechnology*, 14(1), 1-8.
36. Duru Majesty, Akubugwo Emmanuel, Goddy Chinyere, Amadi Benjamin, Agomuo Emmanuel, Jervas Ozougwu and **Amadi Peter** (2015). Evaluation of nutritional potential of selected floras of lower phylum. *Published in the Book of Proceedings of the 45<sup>th</sup> Annual General Meeting and Scientific Conference of the Nutritional Society of Nigeria*.pp.131-147.