

RESEARCH PROJECT

Experiences

- Survival of faecal bacteria of chicken (*Gallus domesticus*) in lagoon environment.
- Microbial population of a laboratory scale digester fed with industrial wastes.
- Succession of microorganism involve in Biogas production from Agro-Industrial wastes such as Pig wastes and Cow dung and also chicken droppings
- Monitoring of biogas during its production from Agro-Industrial wastes.
- Fermenting microorganisms involved in L-glutamic acid from Agro-Industrial wastes.
- Analysis of Agro-Industrial wastes such as corn pomace, cassava peel and pineapple wastes
- Isolation, characterization and Identification of microorganism involved in the digestion of wastes for biogas, and L-glutamic acid production.
- Development of process technology for the production of industrial enzymes.
- Isolation, characterization and identification of promising microorganisms for enzyme production
- Screening of hyper producing Micro Organism for enzyme production.
- Process technology for the production of glucose syrup from cassava starch.
- Process technology for the production of fructose syrup from glucose
- Cottage level process technology for the production of glucose syrup from malted rice paddy (*Oryza sativa*).

SPECIFIC ACHIEVEMENTS IN RESEARCH

- Development of basic microbiology laboratory for research studies
- Produced Biogas and bio fertilizer from cow-dung, poultry droppings, piggery waste and water hyacinth (*Eichhornia-craesipies*)
- Development and construction of a 42m Biogas digester at Ojokoro co-operative agricultural multipurpose society piggery farm in Lagos state, Nigeria.
- Development of the process technology for the production of the following industrial enzymes using solid state and submerged fermentation.
 - Amylase
 - Glucoamylase
 - Pectinase
 - Glucose Isomerase
 - Protease
 - Xylanase
 - Cellulase
- Development and process technology for the production of glucose syrup from cassava starch.
- Development of cottage level production of glucose syrup from malted rice paddy (*Oryza sativa*)

THESIS AND DISSERTATION

- Fermentative production of L-glutamic acid from Agro-Industrial wastes PHD 2005
- Microbial population of a laboratory scale digester fed with industrial wastes. MSC 1987
- Survival of faecal bacteria of chicken (*Gallus domesticus*) in Lagoon environment. BSC 1985

MANAGEMENT DUTIES

- Supervision of microbiology laboratory staff
- Supervision of students from universities and polytechnics on Industrial attachment and also NYSC members
- Acting as head of department when substantive holder is on leave.
- Head of division, Enzyme Technology Division.
- Member of promotion committee for junior staff promotions,

LEADERSHIP RECORD

- Head of division (Enzyme Technology) FIIRO
- Coordinator and principal investigator of the project on;
 - Biogas and Biofertilizer production from agro-industrial wastes
 - Biogas and Biofertilizer production from piggery wastes using 43m Biogas reactor built and constructed by FIIRO
 - Fermentative production of L-glutamic acid from agro-Industrial wastes
 - Production of glucose isomerase enzyme from agricultural raw materials for use in the production of fructose syrup
 - Cottage level production of glucose syrup from cassava starch using malted rice paddy (*Oryza sativa*)
 - Production of Amylase and Glucoamylase enzymes from agricultural Raw materials for use in the production of glucose syrup.
 - Production of rice malt from rice paddy (*Oryza sativa*)
 - Microbial production of xylanase enzymes
 - Extraction of milk clotting enzymes from Sodom apple (*Calotropis procera*)
 - Microbial production of pectinase enzyme
- Coordinator on the following projects on;
 - Microbial production of cellulose enzymes
 - Production of carbonated fruit juices
 - Production of pectinase enzyme
 - Production of phytase enzyme
 - Microbial production of Biosurfactants from local sources.

TEACHING EXPERIENCE

1. Senior lecturer (Sabbatical, 2010 - 2011)
Covenant University,
Ota Ogun State Nigeria.

ACHIEVEMENTS:

1. Produced biogas and biofertilizer from cow-dung poultry Dropping, piggery waste and water hyacinth (*Eichhornia crassipies*)
2. Produced biogas and biofertilizer from co cow-dung poultry dropping and piggery wastes.
3. Production and utilization of 42M³ biogas digesters Designed by F.I.I.R.O. at Ojokoro cooperatives agricultural multipurpose society (OCAMS) piggery farm in Lagos, Nigeria
4. Designed and fabricated burner for the Utilisation of the Produced biogas for cooking purpose by the farmers.
5. Completed the fermentative production of L-glutamic acid from agro-industrial waste of cassava peel, corn pomace and pineapple wastes
6. Currently extracting milk-clothing enzyme from Sodom apple (*Calotropis procera*) and undertaking solid state fermentation for Amylase and glucoamylase enzymes from rice-bran and its use in the production of glucose syrup from cassava starch.
7. Produced and utilized glucose isomerase enzyme from agro – industrial wastes and its use in production of fructose syrup.
8. Produced pectinase, protease and cellulase from agro industrial wastes and their use in various industries

PATENTS

1. Production of Indigenous extracellular microbial amylases and their applications **(RG:NG/P/2016/136)**
2. Generation of biogas from piggery waste using 42m³ biogas digester **(RP:NG/P/2010/457)**
3. Method of producing fermented sweet potato flour using starter culture**(RP:NG/P/2018/264)**

PUBLICATIONS

1. Yewande.Subaru, Idowu.Akande, Titilola. Samuel, **Adekunle.Lawal**, Ademola.Olaniran (2019) Cloning, expression, purification and characterisation of serine alkaline protease from *Bacillus Substilis* RD7 Biocatalysis and Agricultural Biotechnology 20:101264

2. Yewande.Subaru, Idowu.Akande, Titilola. Samuel, **Adekunle.Lawal**, Ademola.Olaniran (2019) Optimisization of Protease Production from Indigenous BAccilus Species Isolated from Soil Samples in Lagos, Nigeria using Surface Methodology. Biocatalysis and Agricultural Biotechnology 18:1-13
3. Fadipe T.O, Kolawole T.O, Ajayo O.I, Akadiri O.O, Baruwa A.S, Ibidapo O.I, **Lawal A.K.**, Ehiwuogu-Onyibe J. and Elemo G. N (2018) Isolation and Screening of Polyhydroxyalkanoates Producing Bacteria from Soils of Fruits, Food and Fermented Cassava Processing Site. Journal of Industrial Research and Technology 7(2):40-48.
4. Fadipe T.O., Jamil, N and **Lawal A.K** (2018) Optimisation of Carbon Substrate for Polyhydroxyalkanoates Production by *Acinetobacterole ivorans* SD12. Journal of Industrial Research and Technology 7(2): 49-60.
5. Ajayi O.I, Okedina T.A, Samuel A.E, Asieba, G.O, Jegede, A.A, Onyemai, C.P, Ehiwuogu-Onyibe, J, **Lawal A.K**, and Elemo G.N (2018) Evaluation of Starter cuture fermented sweet potatao flour using FTIR Spectra and GCMS Chromatogram. African Journal of Microbiological Research 13(1): 1-13
6. Ajayi O.I, Onyemai, C.P, Akinwale T.E, Okedina T.A, Bamidele M.J, Ehiwuogu-Onyibe, J, **Lawal A.K**, and Elemo G.N (2018) Evaluation of the functional properties of Spontenous and Starter culture fermented sweet potato flour. Microbiology Research Journal International 26(4). 1-8
7. Ajayi O.I, Kosoko S.B, Awogbemi B.J, Okedina T.A, Onyemai, C.P, Ehiwuogu-Onyibe, J, **Lawal A.K**, and Elemo G.N (2018) Colour Profile, Pasting and Sensory Properties of processed weet potato flour. Biotechnology Journal International. 22(4):1-12
8. Orji F.A, Okeretugba, P.O, Ibene, A.A and **Lawal A.K** (2018) Culture Dependent microbiological and enzyme propertiesof petroleum hydrocarbon contaminated agricultural soil in the Niger Delta. Journal of Experimental Agricultural International 27(5):1-115
9. Salaam, O. Temitope, Jamil, NAzia, Alebiosu, A. Folashade, Idowu O. Opeyemi, Khan Naima, **Lawal K. Adekunle**, Elemo N. Gloria (2017) Screening of Polyhydroxyl Alkanoates Bacteria From Cassava and Sugar Sites in South- Western Nigeria.ISBM Symposium Proceedings ISSN.2222-3029:29-43
10. Orji, F.A, Edeh, C.P, Okosesi, E.A, **Lawal, A.K**, and Elemo, G.N (2017) Properties of Phyto-Pathogenic Pseudomonas *Spp* Cellulase Produced by submerged fermentation of Brewers Spent Grain. Journal of Industrial Research and Technology 6(1):227-236
11. Orji F.A, Dike E.N, **Lawal A.K**, Sadiq A.O, Suberu Y, Famotemi A.C, Ugnana A.I, Fashola F, Ita B, Olatope S.O, Itoandon E.E, Adefiranye A.O, and Elemo G.N (2016). Properties of *Bacillus Species* Cellulase produced using cellulose from brewer's spent grain (BSG) as substrate. Advances in biosciences and Biotechnology 7: 142- 148
12. Orji F.A, Dike E.N, **Lawal A.K**, Sadiq A.O, Fashola F Suberu Y. L, Famotemi A.C, Ita ,Ugnana A.I, Adefiranye A.O,Itoandon E.E, and Elemo G.N (2016). Properties of *Aspergillus flavus* Cellulase produced using solid state fermentation of brewer's spent grain (BSG) as substrate. British Biotechnology Journal 13(1): 1-9, Article no BBJ: 24882
13. Orji F.A, Fashola F, **Lawal A.K** and Dike E.N., (2016) Identification of Co-factor behavior of Manganese Ion on Cellulase fom Atoxigenic Aspergillus Flavus M15 Strain, Nigerian Society of Micobiology journal

14. Itoandon E.E, Bankole S.A, Adebayo L, **Lawal A.K** and Mayank Gupta (2016). Effect of Substrate Inducers on crude cellulase expression in *Aspergillus Niger*. Journal of Environmental Science, Toxicology and Food Technology 10: (10) : 81-87
15. Abikoye E.T, Ajao O.M, Orji F.A, Okorie P.C and **Lawal A.K** (2016). Studies on the activity of cellulase isolated from Nigerian Strain of *Pleurotus Pulmonarius*. JIRT 5(1) 147-154
16. Onawola, O.O, Nwagala, P.N, Asagbra A.E, Muhammed, B.M, Akinwunmi, O.O, Oladipupo, B.O, and **Lawal A.K** (2016). Determination of the optimal conditions for the activity of phytase from bacillus substilis. 5(2) 53-63
17. Frank Anayo Orji, Ekaette Nduka Dike, **Adekunle Kolawole Lawal**, Abdulateef Omoniyi Sadiq, Yewande Suberu, Asujo Caleb Famotemi, Agatha Isioma Ugbana, Folake Fashola, Blossom Ita, Samuel Olakitan Olatope, Emoleila Ejiya Itoandon, Abimbola Olajumoke Adefiranye, Gloria Nwakaeglo Elemo (2016) Properties of *Bacillus Species* Cellulase produced using cellulose fom Brewers spent grain (BSG) as substrate. Advances in Biosciences and Biotechnology. 7: 142-148.
18. Orji F.A, Dike E.N, **Lawal A.K**, Sadiq A.O, Famotemi A.C, Fashola F, Suberu Y.L, Itoandon E.E, Ugbana A.I, Ita B and Elemo G.N. (2016) Properties of *Aspergillus flavus* cellulase produced fom solid state fermentation of Brewers spent grain (BSG) as substrate. British Biotechnology Journal (In Press) ISSN: 2231-2927
19. Odetunde, S. K., Adekola, I. T., Avungbeto, M. O. and **Lawal, A. K.** (2015). Antimicrobial effect and phytochemical analysis of *Aframomum melegueta* on some selected bacteria and fungi. European Journal of Biotechnology and Bioscience. 3(4): 15 – 19
20. Alebiosu, F. A., **Lawal, A. K.**, Olatope, S. O., Suberu, Y. L., Shittu, K. A., Esan, O. A., Dike, E. N. And Elemo, G. N. (2015). Production of xylanase from fungal isolates by solid state fermentation using sugarcane bagasse. Int. J. Curr. Microbiol. Appl. Sci. 4(12): 323 – 331.
21. Famotemi, A. C., **Lawal, A. K.**, Dike, E. N., Olatope, S. O. A., Shittu, K. A., Itoandon, E. E., Kehinde, M. O., Orji, F. A. And Elemo, G. N. (2015). Production of pectinase from strains of *Aspergillus niger* using corn pomace by solid state fermentation. (SSF). International journal of Advanced Research in Biological Sciences, 2(5): 93 - 99
22. Odetunde, S. k., Tihamiyu, A. Z., **Lawal, A. K.** and Itoandon, E. E. (2015). Microbial Evaluation of soft Cheese ('WARA') Sold in Two market locations (Mushin and Orile) in Lagos Metropolis, Lagos State, South – West, Nigeria. Int. J. Adv. Res. Biol. Sci. 2(4): 210 – 218
23. **Lawal, A. K.**, Banjoko, A. M., Olatope, S. O., Alebiosu, F. A., Orji, F. A., Suberu, Y. L., Itoandon, E. E., Shittu, K. A., Adelaja, O. D., Ojo, E., Dike, E. N. and Elemo, G. N. Production and Partial Purification of Glucoamylase from *Aspergillus niger* Isolated from Cassava Peel Soil in Nigeria. African Journal of Biotechnology. Vol. 13 (21). Pp. 2154 – 2158, 21 May, 2014.
24. Odetunde, S. K., Adebajo, L. O., **Lawal, A. K.** and Itoandon, E. E. (2014). Investigation into Microbiological and Chemical Characteristics of Cassava Flour in Nigeria. Global Advanced Research Journal of Microbiology (ISSN: 2315-5116) Vol. 3(3) pp. 031-040.

25. **Lawal, A. K.**, Itoandon, E. E., Fashola, F., Ajayi, O., Ojo, E. E., Adepoju, F. A., Ugbana, A. I., Elemo, G. N. and Dike, E. N. (2014). Production of Alkaline Protease by *Bacillus polymyxa* using Agro-Industrial Waste by Solid State Fermentation. *Global Advanced Research Journal of Microbiology* (ISSN: 2315-5116) Vol. 3(3) pp. 041-048.
26. **A. K. Lawal**, A. M. Banjoko, S. O. Olatope, F. A. Alebiosu, F. A. Orji, Y. L. Suberu, E. E. Itoandon, K. A. Shittu, O. D. Adelaja, E. Ojo, E. N. Dike and G. N. Elemo. Production and Partial Purification of Amylase by *Aspergillus niger* Isolated from Cassava Peel. *Journal of Basic and Applied Sciences*. 2014, 10, 287 – 291.
27. Orji, F.A., Dike, E.N., **Lawal, A.K.**, Elemo, G.N., Olatope, S.O.A., Famotemi, A.C., Itoandon, E.E., Suberu, Y.L., Asieba, G.O., Sadiq, A.O., Olasore, O., Okafor, E.N., Ugbana, A.I. and Adefiranye, A.O. Production of Cellulase from *Bacillus* species Using Cellulose from Brewer's Spent Grain (BSG) As A Sole Carbon Source. *Asian Jr. of Microbial Biotech. Env. Sc.* Vol. 15, No. (4): 2013, 839 -848.
28. **Lawal A.K.** Banjoko A.M, Osikoya, AF, Olatope, SO, Kayode.F. Etoamaihe, M. Itoandon, E.E., L. Alebiosu, FA, Majolagbe, YL Shittu, KA, Buhari .F. and Dike.E.N (2012).Production and Optimal Performance Studies of Glucose Isomerase from Agricultural Raw materials. *Global Advanced Research Journal of Microbiology*. 1(7): 108 -119.
29. Raimi, O. Falade., O.A, Foloruna, O.G., and **Lawal A.K** (2012).Zinc and Iron levels in pregnancy: A review *Pakistan J. food. Science*. Vol. 22 (2) : 53 -60. 10.
30. **Lawal A.K** and Adedeji, O.M. (2011). Nutritional and elemental analysis of warankasi (Fermented milk product) sold in Lagos metropolis. *Int. Research Journal of Biotechnology*. vol. 2(8)
31. **Lawal, A.K**, Olatope, S.O, Majolagbe, Y.L, Alebiosu, O.F, Dike, E.N, Akinola, S.O and Elemo, G.N. (2011). Microbial production of Alkaline Protease. *Prime journal of Microbiology Research (PJMR)*. ISSN: 2251-127x.
32. **Lawal, A.K**, Oso,B.A, Sanni, A.I, Grillo, J.A and Elemo, G.N (2011). Production of L- glutamic acid from *Bacillus* isolates cultivated on agro industrial wastes containing medium. *Global Research Journal of Microbiology*. Vol. 1(3):042-055.
33. **Lawal A.K**, Oso B.A Sanni, A.I and Akinola S.O (2011). Mutational Studies for hyper producers of L- glutamic acid from *Bacillus* strains UGI and OG4 from vegetable proteins. *African journal of Microbiology Research*. Vol 5(14). 1813 -1825.
34. Odetunde, S I , **Lawal A.K**, Akolade, AM. and Bakare, SB. (2011). Microbal Flora of frozen chicken part varieties. *International Research Journal of Microbiology* 1R JM. 2(10).
35. **Lawal, A.K**, Oso, B.A, Sanni, A.I and Olatunji,O.O (2010). L-glutamic acid production by *Bacillus* spp isolated from vegetable Proteins. *African Journal of Biotechnology*. Vol. 10(27):5337-5345.

36. Grillo, J.A and **Lawal A.K** (2010) In vitro activity of *Thauma to coccus danielli* and mega in against spoilage fungi of white bread and Eba' and indigenous staple food in Southern Nigeria. *African journal of microbiology Research*. 4(11): 1096 -1081
37. **Lawal, A. K.** Oyedoyin, O.B. and Olatunji,O.O. (2009). Fate of Pathogenic Bacteria during Fermentation of Cereal Porridge ('ogi') - A Weaning Food Formula. *Nigerian Food Journal*. 27(1): 19-26.
38. Lawal, R. A. **Lawal, A. K.** and Adekalu, J. B. (2009). Physico-chemical Studies on Adulteration of Honey in Nigeria. *Pakistan Journal of Biological Sciences*. 12(15): 1080-1084.
39. Oluwole, O.B, Mordi, J.I, Adeyoju, A, Daramola, A.O, Onyibe, J, Ebun, K.K, Joaquim, A.A, **Lawal, A.K.** and Adeyemo, F.S. (2008). Production of protein enriched tapioca. *Yabatech Journal of Technology*. Vol2(1):32-38.
40. Mathew O. Ilori Sunday A. Adebuseye **Lawal A. K.** and Oluwatoyin A. Awotiwon. (2007). Production of Biogas from Banana and Plantain Peels. *Advances in Environmental Biology*. 1(1): 33-38.
41. **Lawal A.K.** Ajuebor F.N and Olatunji O.O (2008) An Investigation into the operating parameters for the generating of quality Biogas from Piggery Wastes. *Journal of Industrial Research and Technology (JIRT)*. 2(1):1-5.
42. Adekunle, A.A. **Lawal A.K.** and keshiro O.R. (2005) Anti fungal properties of the crude extracts of *bacihime thonningil schum* (caesalpiniacea) and *Sarcocephalus esculent* Afzel. (Rubiacease) from a tropical forest in Nigeria *Hamdard Medicuss* Vol. XLVIII, (No 4) 78-82
43. Adeleye, I. A., Okorodudu, E. and **Lawal, A.K.** (2004). Effects of some Herbicides used in Nigeria. *Journal of Environmental Biology*. 225 (2): 156-157
44. Adeleye, I.A. and **Lawal, A.K.** (2003). Fungi associated with Corroded Metal Wristwatches in Lagos. *Nigerian Journal of Botany*. 16: 105-107.
45. Ajuebor, F.N., **Lawal A.K** and Omotade, S.A. (2001). Evaluation of FIIRO Solar Dryer for Fruits and Vegetables. *Nigeria Food Journal*. 20: 17-24.
46. **Lawal, A.K.**, Ajuebor, F.N. and Ojosu J.O (2001). Characteristics of Pig Wastes Feedstock for the Determination of Design Parameters for Biogas Digester Plant. *Journal of Research and Review in Science*. 2: 193-198.
47. **Lawal, A.K.** and Oso, B.A. (2001). Mutational Studies for Hyper Producing Microorganisms for L- glutamic acid Production. *Journal of Research and Review in Science*. 2: 152-157. 44.

48. Oyedoyin B.O., Orisagbemi, C.O. and **Lawal, A.K.** (2001), An Investigation of the Physical Properties and Malting Characteristics of some Newer Sorghum Cultivars. *Journal of Science Technology and Environment* 1(2): 1-11.
49. Oyedoyin, B.O., Orishagbemi, C.O. and **Lawal A.K.** (2001). Quantitative assessment of changes in Tannin, soluble proteins content and diastatic activity during germination of some improved sorghum cultivar. *Journal of Research and Review in Science* 2:227-231.
50. **Lawal, A.K.** (1998) L- glutamic acid production from some Agro-Industrial waste. *Proceeding of Nigeria Society for Microbiology*. 1(1): 49 -53.
51. **Lawal, A.K.**, Ayanleye T.A and Kuboye, A.O. (1995). Biogas Production from some Animal Wastes. *Nigeria Society for Microbiology*. 1 (1): 40-42.
52. **Lawal A.K.**, Ayanleye T.A., Koleoso, O.A. and Oniwinde, AB. (1995) Pre treatment of water hyacinth (*Eichhornia —crassipies*) for anaerobic biodegradability. *Nigerian Society for Microbiology* 10; 33-35.
53. Opere, B.O., **Lawal A.K.**, Smith S.I., Yusuf, M.O. (1998). Microbiological Assessment of Some Ice cream Sold in Lagos Metropolis *Journal of Prospect in Science* 2:300 -305

PROCEEDINGS

1. Famotemi, A. C., **Lawal, A. K.**, Dike, E. N., Olatope, S. O. P., Shittu, A. K., Itoandon, E. E., Kehinde, M. O., Orji, F. A. and Elemo, G. N. (2014). Pectinase Production from Two Strains of *Aspergillus niger* by Solid State Fermentation. Book of Extended Abstracts of the 38th Nigerian Institute of Food Science and Technology, Annual Conference and General Meeting, Lagos. Pp. 182 – 183
2. Orji, F. A., Dike, E. N., **Lawal, A. K.**, Sadiq, A. O., Olatope, S. O. A., Famotemi, A. C., Itoandon, E. E., Suberu, Y. L., Fashola, F. A., Asieba, G. O. and Elemo, G. N. (2014). Properties of Bacillus species Cellulase produced Using Cellulose from Brewer's Spent Grain (BSG) as Substrate. Book of Extended Abstracts of the 38th Nigerian Institute of Food Science and Technology, Annual Conference and General Meeting, Lagos. Pp. 209 – 210.
3. Itoandon, E. E., **Lawal, A. K.**, Suberu, Y. L., Ojo, E. E., Fashola, F., Ajayi, O., Adepoju, F. A. and Ugbanu, A. I., Elemo, G. N., Dike, E. N. (2014). Effect of Substrate on Crude Protease Activity of Water, Citrate and Borate Buffer Extracts. Book of Extended Abstracts of the 38th Nigerian Institute of Food Science and Technology, Annual Conference and General Meeting, Lagos. Pp 145 – 146.
4. Itoandon, E. E., **Lawal, A. K.**, Olatope, S. O. P., Alebiosu, F. A., Adepoju, O. A., Ugbanu, A. I., Ojo, E. E., Dike, E. N. and Elemo, G. N. (2014). Comparative Studies on Activities of Crude Amylase and Glucoamylase from *Bacillus polymyxa* using Submerged Fermentation. Book of Extended Abstracts of the 38th Nigerian Institute of Food Science and Technology, Annual Conference and General Meeting, Lagos. Pp. 186 – 187.

5. **Lawal, A. K.**, Olatope, S. O., Alebiosu, F. A., Suberu, Y. L., Shittu, K. A., Itoandon, E. E., Adelaja, O. D., Dike, E. N. and Elemo, G. N. (2013). Screening of Molds (Hyper Producers) for the Production of Xylanase from Decaying Woods. Book of Extended Abstract. The 37th Annual Conference of the Nigerian Institute of Food Science and Technology. (NIFST). Pp. 175-177
6. **Lawal, A. K.**, Olatope, S. O., Alebiosu, F. A., Suberu, Y. L., Shittu, K. A., Itoandon, E. E., Adelaja, O. D., Dike, E. N. and Elemo, G. N. (2013). Determination of Enzyme Activity of Crude Xylanase. Book of Extended Abstract. The 37th Annual Conference of the Nigerian Institute of Food Science and Technology. (NIFST). Pp. 152-153
7. Adefiranye, A.O., Dike, E.N., Teniola, O.D., **Lawal, A.K.**, Kehinde, M. T., Olatope. S.O., Esan, A.O., Okafor, J.N.C., Shittu, K.A., Ugbana, A.I., and Orji, F.A. (2013). Physico chemical analysis of fermented african yam bean flour. Proceedings of NIFST 37th annual conference and general meeting held at International conference centre, Abuja between 22-th26 October, 2013.
8. **Lawal, A.K.**, Banjoko, A.M, Olatope. S.O, Majolagbe, Y.I, Itoandon, E.E, Alebiosu, F.A, Buhari. F, Shittu, K.A, Odijie, E.E, Elemo, G.N. and Dike, E.N. (2012). Screening of *Aspergillus niger* (Hyper producers) for the production of Amylase and Glucoamylase from Agricultural Raw materials. Proceedings of the 36th Annual conference and general meeting of the Nigerian Institute of Food Science and technology, (NIFST) (EKO 2012) pp 90-91.
9. **Lawal, A.K.**, Banjoko, A.M, Olatope. S.O, Majolagbe, Y.I, Itoandon, E.E, Alebiosu, F.A, Buhari. F, Shittu, K.A, Odijie, E.E, Elemo, G.N. and Dike, E.N. (2012). Amylase Enzyme activity during Glucose Syrup production. Proceedings of the 36th Annual conference and general meeting of the Nigerian Institute of Food Science and technology, (NIFST) (EKO 2012) pp 91-93.
10. **Lawal, A.K.**, Banjoko, A.M, Olatope. S.O, Majolagbe, Y.I, Itoandon, E.E, Alebiosu, F.A, Buhari. F, Odijie, E.E, Elemo, G.N. and Dike, E.N. (2012). Glucoamylase enzyme Activity during Glucose Syrup production. Proceedings of the 36th Annual conference and general meeting of the Nigerian Institute of Food Science and Technology. (NIFST). Pp 94-96.
11. **Lawal, A.K.**, Oso, B.A, Sanni, A.I and Olatunji,O.O (2010). L-glutamic acid production by *Bacillus* spp isolated from vegetable Proteins. Proceedings of the nd2 International Biotechnology Symposium (IBS). Department of Biological Sciences, Covenant University Ota. Pp 16-18.
12. **Lawal, A.K.**, Oso, B.A, Sanni, A.I and Olatunji,O.O (2010). Agro-industrial wastes for L- glutamic acid nd production by *Bacillus* spp. Proceedings of the 2International Biotechnology Symposium (IBS). Department of Biological Sciences, Covenant University Ota. Pp 24-26.

13. **Lawal, A.K.**, Osikoya, A. F, Olatope, S.O, Alebiosu, A.F, Kayode, O.F, Dike, E.N and Elemo, G.N (2010). Cottage level production of glucose syrup from cassava starch using malted rice paddy (*Oryza sativa*). Proceedings of the 2 International Biotechnology Symposium (IBS). Department of Biological Sciences, Covenant University Ota. pp 54-56.
14. **Lawal, A. K.** Olatope, O. F. Kayode, O. F. Alebiosu, F. A. and Dike, E. N. (2009). Production of Rice Malt from Rice Paddy (*Oryza sativa*). Proceedings of the 33 National Conference of the Nigerian Food Journal. Oct 12- 16 2009. Yola. PP. 29-30.
15. **Lawal, A.K.** and Oyenuga, O. A (2009). Microbial Analysis of different Garri Samples (Ijebu, yellow rd and Bendel types). Proceedings of the 33 National ththConference of Nigerian Food Journal. Oct. 12- 16, 2009. Yola. PP 187-188.
16. **Lawal, A. K.** Oyenuga, A.O. Sanni, O.A. and Alebiosu, F.A. (2009). Isolation and Identification of Amylolytic Bacilli from Cassava dump site in Different Cassava Processing Locations. Proceedings of the 33 National Conference of ththNigerian Food Journal Oct. 12-16 ,2009. PP 282-283.
17. **Lawal, A. K.** Olatope, O.F. Kayode, O. F. Alebiosu, F. A. and Dike, E. N. (2009). Amylase Activity during Malting of Rice Paddy (*Oryza sativa*). Proceedings of the 33 National Conference of the Nigerian Food Journal. Oct. 12-16,2009. PP.53-54.
18. Oyenuga, A. O. **Lawal A. K.** and Ojei Esther (2009). Isolation and Identification of Microorganisms associated with the Skin Gills and Intestine of Catfish (*Clarias gariepinus*) sold in three markets in Lagos Mainland. Proceedings of the 33 National Conference of Nigeria Food Journal. Oct 12- 16, 2009. Yola. PP. 276-277. 33.
19. **Lawal, A. K.** (2009). Scale up of cottage level production of Glucose syrup from cassava starch using malted rice paddy (*Oryza sativa*). Department of Biotechnology, Enzymology and Genetics division, FIRO, Lagos.
20. **Lawal, A. K.** (2008). Production of Amylase and Glucoamylase from Agricultural raw material for use in the production of Glucose Syrup. Department of Biotechnology, Enzymology and Genetics division, FIRO, Lagos.
21. **Lawal, A.K.** (1998) Nutrition requirement for L-glutamic acid production by *Bacillus subtilis*. Proceeding of Nigeria society for Microbiology. 1 (1) 60 -64.

PAPERS PRESENTED AT CONFERENCES.

1. Salaam O. Temitope, Jamil Nazia and **Lawal K. Adekunle** (2018) Biosynthesis of Poly-3-hydroxyl alkanoates by Starch Hydrolysing *Baccillus Cereus* C113 at the 31st Annual International Conferences of thr Biotechnology Society of Nigeria BSN-Ota Held at Covenant University Ota from August 5th-9th (Oral Precentation)
2. Salaam O. Temitope, Jami Nazia and **Lawal K. Adekunle** (2018), Biosynthesis of Poly-3-hydroxyl alkanoates by Starch Hydrolysing *Baccillus aryabhattai* C48 Isolated from Cassava Dumpsite at theAmerican Society for Microbiology Conference , Atlanta, USA, June 7th -11th 2018 (e-Poster Presentation)

3. **Lawal A.K.** (2000) Characteristics of Pig waste feed stock for the design parameter for biogas plant. A paper presented at the 23 Annual Conference of the Nigerian Society for Microbiology. Conference held between 10-14 Sept. 2000 at IGBINEDION University, Okada City Edo State, Nigeria.
4. **Lawal A.K.** (2000) mutational studies for hyper producing organism for L-glutamic acid production. A paper presented at the 23 Annual Conference of the Nigerian Society for Microbiology held between 10-14 Sept. 2000 at IGBINEDION University, Okada City Edo State, Nigeria.
5. **Lawal, A.K.** (1998). The Future of Industrial Microbiology in Nigeria. A paper presented at National Association of Microbiology student week at University of Lagos, Akoka, Lagos, Nigeria. Between 8-10 October, 1998.
6. **Lawal, A.K.** (1997). Biogas Generation through Anaerobic Digestion of high Pollutational waste from Industrial, domestic and other sources. A Paper presented at a 3day Workshop on Pollution Control and Challenges ahead held at the Akinrele Auditorium, FIRO Lagos, Nigeria between 6 -8 August, 1997.
7. **Lawal, A.K.** and Oso, B.A (2001) Nutritional studies for L-glutamic acid Production ndfrom Agro-Industrial waste. A paper presented at the 2 Annual Conference of Lagos. State University, Faculty of Science, Badagry Expressway, Ojo. Apapa Lagos, Nigeria.
8. **Lawal, A.K.** and Oso, B.A. (2001) Mutagenesis of Wild Strains of Bacillus for ndenhanced L-Glutamic acid production. Paper presented at the 2 Annual conference of Lagos State University, Falculty of Science, Badagry Expressway, Ojo, Apapa Lagos, Nigeria.
9. **Lawal, A.K.** Ajuebor, F.N and Ojosu, J.O. (2001) characteristics of pig waste feedback for determination of design parameters for biogas digester plants. A paper presented at and the 2nd annual Conference of Lagos State University, Faculty of Science, Badagry Expressway, Ojo, Apapa Lagos, Nigeria.
10. **Lawal, A.K.** (1998) L-glutamic acid production from some Agro-Industrial wastes. A paper presented at the 21 Annual conference of the Nigerian Society for Microbiology held at the Akinrele Auditorium, Federal Institute of Industrial Research Oshodi, Lagos, Nigeria.
11. **Lawal, A.K.** (1998) Nutritional Requirement for L-glutamic acid production by *Bacillus subtilis*. A paper presented at the 21st Annual conference of the Nigerian Society for Microbiology held at the Akinrele Auditorium, Federal Institute of Industrial Research Oshodi, Lagos, Nigeria.
12. **Lawal, A.K.**, Ayanleye, T.A., Koleoso O.A. and Oniwinde, A.B. (1995). Pretreatment of water hyacinth (*Eichhornia crassipies*) for Anaerobic biodegradability. A thpaper presented at the 18 Annual Conference of the Nigeria Society for Microbiology held at the University Of Benin Edo State Nigeria.

13. **Lawal, A.K.**, Ayanleye , T.A. and kuboye, O. A (1995). Biogas Production from some Animal Wastes. A paper presented at the 18th Annual Conference of the Nigerian Society for Microbiology held at the University of Benin do State Nigeria.

INVITED LECTURES

1. **Lawal, A.K.** (2024). Enzymes and Biocatalysis as an Integral Part of White Biotechnology. International Conference on Biotechnology (ICOB24).
2. **Lawal, A.K.** (2013). Production and utilization of industrial Enzymes – FIRO's Contribution. A paper presented at the collaborative study visit between FIRO and the University College of London (UCL)
3. **Lawal, A.K.** (2001) Review of Biogas in Nigeria. A paper presented at 2001 China TCDC International Training Course in Chengdu, Sichuan Province, China PAPERS PRESENTED AS GUEST SPEAKER
4. **Lawal, A.K. (2002)**. Utilization of Wood Wastes for Biogas and Biofertilizer. A paper presented at skill acquisition workshop on "Recycling and Waste Management Business opportunities for women". Organized by Fedrick Ebert Stiftung (FES) for National Women in cooperative (NWIC); Lagos State Branch.
5. **Lawal, A.K.** (1999). Development of Preservative System and Properties of antimicrobial agents. A paper presented at training course organized by Oma Novo Konsult, Lagos, Nigeria.
6. **Lawal, A.K.** (1998). The Future of Industrial Microbiology in Nigeria. A paper presented at University of Lagos. Nigeria. For National Association of Microbiology student week.
7. **Lawal A.K.** (1997). Biogas generation through anaerobic digestion of high pollution waste from Industrial, domestic and other sources. A Paper presented at a training workshop organized by the Association of Industrial Microbiologist of Nigeria, Lagos, Nigeria.

COURSE ATTENDED WITH DATES

1. Molecular Biology Techniques. Starter Culture Development and Food Production. 4th -6th May, 2005. Organized by Danifol Biotechnology Consult. Lagos, Nigeria.
2. The 26 International Training course on Biogas Technology held from June 4-July 18, 2001 at Asia-Pacific Biogas Research and Training Center (BRTC). 4-13, Renmin Nan Street, Chengdu, 610041, Sichuam Province, China.
3. The Optimization of Biogas production held at the Folkecenter for Renewable energy. Kammersguardsverg,16, sdr, ydby.7760 Hurup Yhy. Denmark July 19 -August 26, 1994.

4. International course on the Biotechnology of Biogas production. (New Approaches using Thermophilic Microorganism. Held at Imo State University, Okigwe. 13 - 26August. 1989.

WORKSHOP ATTENDED WITH CERTIFICATE

1. Symposium on industrial raw materials (Alternatives, Adaptations and Implications) by association of Industrial Microbiologist of Nigeria (AIMN) at the Federal Institute of industrial research Oshodi (FIIRO) Lagos 7th September, 2005
2. Symposium on Cleaner production and sustainable Industrial development by association of Industrial Microbiologist of Nigeria (AIMN) at the Federal Institute of industrial research Oshodi (FIIRO) Lagos 3rd October, 2007.
3. Workshop on proposal writing and research management by KVL Industrial Consultancy Ltd.) at the Federal Institute of industrial research Oshodi (FIIRO) Lagos 1st- 2nd July, 2008.
4. Current Good Manufacturing Practices (cGMP) A Tool for attaining Global Standards in Food, Beverage and Pharmaceutical industries by association of Industrial Microbiologist of Nigeria (AIMN) at the Federal Institute of industrial research Oshodi (FIIRO) Lagos 20th August, 2008.
5. 9th Mandatory Training Workshop: Environmental Analysis for sustainable development: Institute of Public Analysts Of Nigeria (IPAN), Lagos 28th-29th April 2009.
6. Symposium on the challenges of water quality management in industries by the Association of Industrial Microbiologist of Nigeria (AIMN)) at the Federal Institute of industrial research Oshodi (FIIRO) Lagos 19th August 2009.
7. 10th Mandatory Training workshop by Institute of Public Analyst Of Nigeria (IPAN). Theme: Quality Assurance in Laboratory management, Lagos 10th-11th November, 2009.
8. Needs Assessment, Research methodology, Report writing, Project Monitoring and Evaluation Workshop by the University of Ibadan Consultancy Services Unit, 28th-30th June,2010.
9. Symposium on Application of HACCP in improving the quality of finished products by the Association of Industrial Microbiologist of Nigeria (AIMN) at the Federal Institute of industrial research Oshodi (FIIRO) Lagos 14th August, 2011.
10. Symposium on Quality Risk Management in food bevarages, Brewery, and pharmaceutical industries products by the Association of Industrial Microbiologist of

Nigeria (AIMN) at the Federal Institute of industrial research Oshodi (FIIRO) Lagos
18th October, 2013

11. Symposium on Validation of Microbiological methods, by the Association of Industrial Microbiologist of Nigeria (AIMN) at the Federal Institute of industrial research Oshodi (FIIRO) Lagos 22nd October, 2014
12. 20th Mandatory Training Workshop by Institute of Public Analyst of Nigeria (IPAN). Theme: Quality Assurance in Laboratory management, Lagos. 18th-19th November, 2014.
13. Training Workshop by industries by the Association of Industrial Microbiologist of Nigeria (AIMN) at the Federal Institute of industrial research Oshodi (FIIRO) Lagos on optimizing laboratory equipment performance and life span, 24th March, 2015
14. Microbiology in the New Millennium. (1999). Organized by Association of Industrial Microbiologist of Nigeria.
15. Biotechnology- a tool for National Development (2001). Organized by the Association of Industrial Microbiologist of Nigeria.
16. Performance enhancement Training aiming for excellence in performance (2003). Organized by AIMN.
17. Industrial Raw materials Alternatives, Adaptations and Implications. (2005) organized by AIMN.
18. Microbes in the changing World (1998). Organized by AIMN.
19. Challenges facing Microbiologist in the New Millenium (1999). Organized by AIMN.
20. IPAN. 18th Mandatory Training Workshop (2013). Theme: Food Safety. An imperative for national development.
21. IPAN. 16th Mandatory training Workshop (2012). Theme: Sampling Techniques and Sample Analysis. Modern Trends.
22. IPAN. 20th Mandatory Training Workshop (2014). Theme: Modern Trends in Analysis and instrumentation.
23. AIMN. Annual Symposium (2014). Validation of Microbiological Methods.
24. AIMN. Annual Symposium (2012). Contemporary Microbiological Challenges in the Food, Beverage, Brewery and Pharmaceutical Industries.

25. IPAN 14th Mandatory Training Workshop. Theme: Role of public analyst towards the achievement of millennium development goals (MDGS).
26. Leadership and management skills for high quality and more relevant research, (2012). Organized by PSL Consulting.

RESEARCH REPORT ON PROJECTS

1. **Lawal, A. K.** (2012). Research report on the proximate composition and shelf life studies on FIRO cassava bread
2. **Lawal, A.K.** (2005) storage studies on the Activity of Milk Clotting enzymes from Sodom apple (*Calotropis Procera*)
3. **Lawal, A.K.** (1999) Nutritional Requirement for L-glutamic acid production by *Bacillus subtilis*.
4. **Lawal, A.K.** (2004) Mutational studies for hyper producing organisms for L-glutamic acid production.
5. **Lawal, A.K.** (2002). An Investigation into the Operating Parameter for the generation of Quality Biogas from Piggery Wastes.
6. **Lawal, A.K.** (2003) Extraction of Milk clothing enzymes from Sodom apple (*Calotropis Procera*).
7. **Lawal, A.K.** (1998). Biogas Training Manual. Prepare for the training of retired farmers on the use and operation of a 42m Biogas digester on piggery wastes for Ojokoro cooperative Agricultural Multipurpose Society (OCAMS). Lagos, Nigeria.
8. **Lawal, A.K.** (2001) Biogas Training Manual (Site demonstration) for Ojokoro/Okoba Agricultural Multipurpose Society Oko Oba. Lagos, Nigeria.
9. **Lawal, A.K.** (2006) Production of amylase and glucoamylase enzymes from agricultural raw materials for use in the production of glucose syrup.
10. **Lawal A.K** (2012) Microbial Production of Protease enzyme

CONTRIBUTIONS TO SCIENTIFIC WRITING

1. **Lawal, A.K.** (1999) .The future of Industrial Microbiology in Nigeria. For AIMN Newsletter
2. **Lawal, A.K.** (2001) .A food Industry guide on all Glutamate. For AIMN Newsletter.
3. **Lawal, A.K.** (2000) .Turning your waste into Energy for AIMN Newsletter.

PROFESSIONAL MEMBERSHIP

1. American Society for Microbiology (ASM).
2. Nigerian Society for Microbiology (NSM)

3. Association of Industrial Microbiology of Nigeria (AIMN)
4. Nigeria Institute for Food Science and Technology. (NIFST).
5. Institute of Public Analyst of Nigeria (IPAN) with practice No: 00646
6. President, Association of Industrial Microbiology of Nigeria 2018- till date

RESPONSIBILITY COMMITTEE

1. Commercialization Committee of FIIRO's Technology for the 50TH Anniversary Celebration
2. Symposium and Publication Committee for FIIRO's 50th
3. Committee on the preparation of Practical Strategies for the Technologies and Industrial in Nigeria.
4. Editorial member on Cassava Book launched during the 50 Anniversary of FIIRO.
5. Editorial Board member for Journal of Industrial Research
6. Editor in Chief of JIRT (2015 – TILL DATE).

CONTRIBUTION TO BOOK WRITING

1. Lawal, A.K and Akinola, S.O.(2006). Utilization of cassava peel for L-glutamic acid production. CASSAVA BOOK: Production, processing and utilization in Nigeria. Pp 152-155.
2. Akinola, S.O and Lawal, A.K.(2006). Utilization of cassava starch for the production of glucose syrup. Cassava Book; Production, processing and utilization in Nigeria. Pp 148-152.
3. Lawal, A.K. (1995). The future of Industrial Microbiology in Nigeria in association of Industrial Microbiologist of Nigeria (AIMN) Newsletter.
4. Lawal, A.K. (2001). A food industry guide on all Glutamate. AIMN Newsletter
5. Lawa;, A.K (2001). Turning your waste into Energy. AIMN Newsletter.

TRAINING FELLOWSHIPS, SPONSORSHIPS.

- Molecular biology techniques, starter culture development and food production in Nigeria (2005) by Danifol Biotechnology consult, Lagos.
- International Biotechnology Symposium (IBS). 'Biotechnology In: An emerging economy at Covenant University' 28th – 30th April 2009.
- WAITRO sponsorship Training on the optimization of Biogas production held at Folkecenter for renewable energy Kammerguardsverg, 16 sdr ydby. 7760 Hurup Thy. Denmark. July 19th – 26th August (1994)

- The 26th International Training course on biogas technology held from June 4-July 18th 2001 at Asia-Pacific Biogas Research Training Centre (BRTC) 4-13 Renmin Nan street, Chengdu 610041, sichuam province, China.
- Collaboration study visit on Enzyme technology at university college of London (UCL) London. Sept. 2013
- International Course on the Biotechnology of Biogas production (New approaches using thermophilic microorganisms) Held in Imo state university Okigwe, Nigeria. 13th-26th August (1989)

MEMBERSHIP OF PROFESSIONAL INSTITUTIONS

- Nigerian Institute for food science and technology member.
- Nigerian society for Microbiology (NSM) member.
- Association of Industrial Microbiologists of Nigeria (AIMN) member.
- American society of Microbiology (ASM) member
- Institute of public Analyst of Nigeria (IPAN) member.

EXTERNAL REPRESENTATIONS AND EXAMINATIONS

- Senior lecturer (sabbatical) at department of microbiology Covenant University, Ota, Ogun state. (2010).
- Member of the local organizing committee for the Nigerian Society for microbiology. 17th Annual conference held in FIIR, Oshodi. December 1989.
- Member of the local organizing committee for the Nigerian society for microbiology – 19th Annual conference held in FIIR, Oshodi. December, 1993.
- External moderator at yaba college of technology in the department of biological science (2012)
- External moderator at Lagos state polytechnic in the department of Pure and Applied sciences. 2013 till date
- External assessor for staff due for promotion from principal lecturer to chief lecturer in Biological science department of Yaba college of technology, Yaba 2014.

OTHER SKILLS

- Basic computer skills in word processing, desktop publishing and computer operation.
- Languages spoken; Yoruba and English.

HOBBIES/INTEREST

- Listening to Christian music
- Reading
- Mentorship

TRAVEL

Extensive travel to over ten states in Nigeria; in West Africa; Cotonou and South Africa. In Europe; Denmark, London. In Asia; China.