

CURRICULUM VITAE

1. **NAME:** **AKPAN, Inyang**

2. **POSTAL ADDRESS:** Dept. of Microbiology
University of Agriculture
P.M.B. 2240
Abeokuta, Nigeria
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3. **HOME ADDRESS:** Ufuku —Ikot Ama, Okon
Essien Udim LGA
Akwa Ibom State, Nigeria

- 4a. **DATE OF BIRTH:** 8th October, 1956

- b. **Marital Status:** Married

5. **PRESENT POST:** Professor of Industrial Microbiology, University of Agriculture, Abeokuta, Nigeria.

- 6a. **Institution Attended & Qualifications with Date:**
 1. **University of Calabar, Nigeria:**
 - B.Sc. Microbiology- 2nd Class Upper Division - 1978 —1982
 2. **University of Benin, Benin City, Nigeria:**
 - M.Sc. Food and Industrial Microbiology - 1984 —1986
 3. **University of Benin, Benin City, Nigeria:**
 - Ph.D Industrial Microbiology - 1990 — 1994

- b. **Membership of Professional Bodies:**
 1. Member, Nigeria Society for Microbiology - 1986
 2. Member, New York Academy of Sciences - 2002
 3. Member, American Society for Microbiology - 2004
 4. Member, Science Association of Nigeria - 1989
 5. Treasurer, Nigerian Society for Microbiology - 1986 — 1990
 6. Secretary, African Regional Network for Microb. - 2002 — 2004
 7. Secretary, Nigerian Society of Microbiology - 2002 — 2006
 8. Vice-President, Nigerian Society for Microbiology - 2006 — 2010
 9. President, Nigerian Society for Microbiology - 2010 — Date

7. **Academic Distinctions and Awards:**
 - (a) National Merit Award (Biological Science), University of Calabar - 1980 — 1981
 - (b) UNESCO Short-term Fellowship on Biotechnology - 1992
 - (c) Commonwealth Science Council Fellowship - 1992
 - (d) VLAG Fellowship, Wageningen Agricultural University
The Netherlands - 1996

8. **Work Experience:**

a. University Teaching Experience

I have taught both undergraduate and post graduate courses in Nigerian Universities since 1986 in Nigeria as Assistant lecturer, Lecturer 1, Senior Lecturer and now as Professor. The details are stated below.

b. Post:

Assistant Lecturer	- University of Lagos, Abeokuta Campus, Abeokuta, Nigeria	1986-1988
Lecturer 2	- University of Agriculture, Abeokuta, Nigeria	1988-1994
Lecturer 1	- University of Agriculture, Abeokuta, Nigeria	1994-1999
Senior Lecturer	- University of Agriculture, Abeokuta, Nigeria	1999-2004
Visiting Senior Lecturer	- University of Uyo, Uyo. Nigeria	2001-2002
Associate Professor	- University of Agriculture, Abeokuta, Nigeria	2004-2007
Professor, Industrial Microbiology	- University of Agriculture, Abeokuta	2007 – Date
Associate Lecturer (Professor)	- Crescent University, Abeokuta	2008-till dates
Visiting Professor	- Joseph Ayo Babalola University, Ikeji Arakeji	April 2009-Sept 2009
Visiting Professor	- University of Lagos, Akoka, Lagos	Oct 2009–March 2010

c. Student Supervision

Supervise and direct under graduate and graduate student projects in the Department.

The number of post graduate students supervised are given below:

M.Sc 12

Ph.D 8

9. **Administrative Experience**

(a) Position in Administration

- | | | | |
|------|--|---|-------------|
| (i) | Head, Department of Science Laboratory Technology, University of Agriculture, Abeokuta | - | 1997— 2000 |
| (ii) | Head. Department of Microbiology, UNAAB | - | 2005 — 2009 |

(b) Position in University Committees

- | | | | |
|-------|---|---|-------------|
| (i) | Member, University Senate, UNAAB | - | 2005 — Date |
| (ii) | Member, University Admission Committee | - | 1997 — 2000 |
| (iii) | Member, Student Disciplinary Committee | - | 1994 — 2000 |
| (iv) | Member, University Teaching and Research Farm | | |

	Management Committee	-	1994 — 1996
(v)	Secretary, UNAAB Biotechnology Group	-	1998 — 2001
(vi)	Representative of COLNAS on COLANIM College Board-		1989 — 1990

10. Community Service

(a) Extension Reports Presented.

- i. Akpan, I. (2001): Biotechnology at University of Uyo — Modalities for a viable Biotechnology R & D Programme, 15pp. A position paper on Biotechnology Development at University of Uyo, presented to the University during my Sabbatical Leave in 2001/2002 Session.
- ii. Akpan, I. (2006). The concept of Universal Basic Education — Implications for Private Schools. Paper delivered at Omolaja Sodipo Memorial Anglican School, Abeokuta, Prize Giving Day.
- iii. Akpan, I. (2006). Agricultural Waste as a Resource: Perspective of a Microbiologist. Paper delivered at College of Natural Sciences Leadership Seminar Series.
- iv. External Examiner in Microbiology to various Department of Microbiology in many Nigerian Universities.
- v. Member, LOC, 1st Intl Confab on Science and National Development COLNAS, UNAAB, 2004.
- vi. Member, Editorial Board, Science and National Development Proceedings of 1st Intl. Confabon Science and National Development, COLNAS, UNAAB, 2004.
- vii. Member. LOC, 2nd Intl. Confab on Science and National Development COLNAS, UNAAB. 2006.

11. Research/Product Development

(i) **Vision**

Directed towards bio-conversion of biomass to biofuels and production of food enzymes from farm wastes, with the view to adding value to Nigeria's agricultural raw materials and enhancing the environment. This is aimed at promoting skilled young agricultural entrepreneurs, enhance farmers income, reduce unemployment among the youths and encourage the use of appropriate local technologies in establishing small-medium scale enterprise in Nigeria.

(ii) **Research Focus**

1. Waste to Wealth Promotion – using appropriate local technologies.
Production of Food enzymes from farm wastes: The enzymes include:
 - i. α – amylase
 - ii. Glucoamylase
 - iii. Lipase
 - iv. Pectinase

2. Renewable energy research:
 - (a) Production of ethanol from cassava starch
 - (b) Production of glucose syrup from cassava
 - (c) Design and Development of bioreactor for the production of glucose syrup from cassava starch.
 - (d) Production of malted rice from local rice varieties
 - (e) Microbial production of biodiesel from vegetable oils
3. Post-harvest Technology
 - (a) Preservation of fresh tomato for peasant farmers using natural biopesticides (Fresh tomato kept fresh on the shelf for 21 days at $27\pm 1^{\circ}\text{C}$ - no refrigeration, using biopesticides.
4. Waste water treatment
 - (a) Treatment of waste water from agro-processing industries using activated charcoal
 - (b) Treatment of fish pond water with activated charcoal

12. Technical Reports/Exhibitions

- i. Exhibition at 1st NUC organized Science & Technology Fair, Abuja, 2004.
Exhibit: A 5L All-glass Bioreactor for the production of glucose syrup from cassava.
- ii. Participation at AU-WIPO Award Competition for Inventions and Innovations organized by National Office for Technology Acquisition and Promotion (NOTAP, Abuja. 28th June, 2007.
Invention on Display: A 10L All-glass bioreactor with filtration unit for production of glucose syrup from cassava.
- iii. Participation at RMRDC Techno Expo 2009 at Abuja, 10th – 13th February, 2009
- iv. Invitation to participate in the National Technology Forum and Technomart on Developing Indigenous Technology for Youth Empowerment, Employment generation and wealth creation organized by National Office for Technology Acquisition and Promotion (NOTAP) holding at Enugu on October 25th – 27th, 2010

13. Consultancy

- i. Team Leader, UNAAB Team on NNPC/UNAAB collaboration – Automotive Biomass Ethanol Programme for Nigeria (2006)
- ii. Resource Person — Raw Materials Research & Development Council Training Workshop on Cottage level production of high quality cassava flour and glucose syrup from cassava roots. Abuja, March 28 — 30 2007.
- iii. Resources Person – Raw Materials Research and Development Council Sensitization Workshop on cassava-based products, 9th May, 2009 Abeokuta.
- iv. Development of cassava-based SME's for increased livelihoods in Akwa Ibom State –Project Proposal submitted to Akwa Ibom State Government 2010.

14. Publications

(a) Dissertation

1. The search for Mu or/and related Bacteriophage. B.Sc Project (1981-1982)
2. Alcoholic Fermentation of Cassava whey. M.Sc Thesis (1984-1986)
3. Microbial Production of Glutamic acid from cassava whey hydrolysate Ph.D Thesis (1990 -1994)

(b) Publications In Learned Journals

1. **Akpan, I.**, Ikenebomeh, M. J., Uraih, N. & Obuekwe, C. (1988). Production of ethanol from cassava whey. *Acta Biotechnologica* 8:39-45
2. **Akpan, I.** Ikenebomeh, M. J., & Doelle, H.W. (1995) Detection of glutamate producers from Nigerian fermented vegetable proteins using HPLC *Nigerian J. Microbiology* 10:66-70
3. **Akpan, I.**, Ikenebomeh, M.J., & Doelle, H.W. (1995) Improved glucoamylase production in rice bran by *Rhizopus* sp. 186F. *Nigerian J. Microbiology* 10:43-47.
4. **Akpan, I.** Ikenebomeh, M.J., & Doelle, H.W. (1996) Effect of carbon and nitrogen supplement on amylase production by *Rhizopus* in rice bran basal medium. *Tropical Science* 36:166-173
5. **Akpan, I.** Ikenebomeh, M.J., & Doelle, H.W. (1998). Glutamic acid fermentation of cassava whey by a *Brevibacterium* G012. *Tropical Science* 38: 147-150
6. **Akpan, I.** Bankole, M.O, Adesemowo, A.M., & Latunde-Dada, G.O. (1999) Production of amylase by *A. niger* in a cheap solid medium using rice bran and agricultural materials. *Tropical Science* 39:77-79
7. **Akpan, I.** Bankole, M.O., Adesemowo, A.M. (1999). A rapid plate culture method for screening of amylase producing microorganisms. *Biotechnology Techniques*. 13:411-413
8. **Akpan I.** Atanda, O.O., & Ajayi, A.A. (1999) Microbiological and nutrient composition of locally produced cocoa beverage. *Nigerian J. Microbiology* 13:79-81
9. Atanda, O.O. & **Akpan, I.**, (1999) Microbiological quality of retailed powdered milk. *Nigerian J. Microbiology* 13:123-125
10. Bankole, M.O., **Akpan, I** & Atanda, O.O. (1999) The antimicrobial effect of spices in "Kunutsamiya" *Nigerian J. Microbiology* 13: 95-97
11. Osho, M.B., **Akpan, I**, & Kareem, S.O. (2001) Production of amylase by *Aspergillus oryzae* immobilized in a gelatin matrix. *Nigerian J. Microbiology*. 15(2): 87- 991
12. Kareem, S.O. **Akpan, I.**, & Osho, M.B. (2003) *Calotropis procera* (Sodom apple) — a potential material for enzyme purification. *Bioresource Technology*. 87(1): 133-135
13. Kareem, S.O. & **Akpan, I.**, (2003) Clarification of amylase from mouldy bran with Imarsil. *Enzyme and Microbial Technology*. 33(2): 259-261
14. **Akpan, I.** & Adelaja, F.A. (2004) Production and stabilization of amylase preparations from rice bran solid medium. *World J. Microbiology and Biotechnology*. 20:47-50
15. Omemu, A.M., **Akpan I.** & Bankole, M.O. (2004) Amylase recovery from mouldy bran of *Aspergillus niger* AM07. *Nigerian Food Journal* 22: 60-64
16. **Akpan I.**, Atanda, O.O. & Ogunfowokan, O.A. (2004) Microbiological quality and nutrient composition of dry tomato. *J. Food Science and Technology*. 41(4):421-422
17. **Akpan, I.** & Kareem, S.O. (2004) A simple method for rapid detection of amylase in liquid chromatographic fractions. *Nigerian J. Microbiology* 18:284
18. **Akpan, I.**, (2004) Screening for novel fungal biocatalysts *Nigerian J. Microbiology* 18:288-292.

19. Atanda, O.O., **Akpan, I.**, Rati E.R. & Ozoje, M. (2005) Palm kernel: a potential substrate for rapid detection of aflatoxigenic fungi. *Food Science and Technology Intl.* 11(1): 67-74.
20. Omemu, A.M., **Akpan, I.**, Bankole, M.O. & Teniola, O.D (2005) Hydrolysis of raw tuber starches by amylase of *A. niger* isolated from the soil;. *African J. Biotechnology* 4(1)19-25
21. Atanda, O.O., **Akpan, I.** & Enikuomehin, A.O. (2006) Palm kernel agar: An alternative culture medium for rapid detection of aflatoxins in agricultural commodities. *African J. Biotechnology*. 5(10): 1029-1033
22. **Akpan, I.**, (2006) Bioremediation of coloured dye effluents from textile industries by *Bacillus* spp. *Nigerian J. Microbiology*. 20(3): 154-160
23. O. B. Shittu, **I. Akpan** and I. O. Okonko (2006). Comparative coagulant property of latex of *Calotropis procera* and ground seeds of *Moringa oleifera*. *Nig. J. Microbiology*, 20(3):1419-1426.
24. Atanda, O.O. **Akpan, I.**, & Oluwafemi, F. (2007) The potential of some spice essential oils in the control of *A. parasiticus* CFR 223 and aflatoxin production. *Food Control* 18:601-607
25. Atanda, O.O. Oguntubo, A. Adejumo, O. Ikeora, J. & **Akpan, I.**, (2007) Aflatoxin M1 contamination of milk and ice cream in Abeokuta and Odeda Local Governments of Ogun State, Nigeria. *Chemosphere* 68:1455-1458
26. Omemu, A. M., Bankole, M. O. and **Akpan, I.**, (2007). Production and Characterization of Extracellular Amyloglucosidase from *Aspergillus niger* CA-19 by Solid State Fermentation. *Research J Microbiology*, 3: 1-7.
27. D. A. Ojo, **I. Akpan** and C. F. Mafiana (2007). Assymptomatic and Symptomatic urinary tract infection in a Nigerian community. *Asset series B* 6(1) 32-39
28. Kareem, S. O.; **Akpan, I.** & Ojo, O. P. (2008). Antimicrobial activities of *Calotroics procera* on selected pathogenic microorganisms. *African J. Biomedical Research*, Vol. 11: 105-110.
29. Kareem, S. O.; **Akpan, I.** & Oduntan, S. B. (2009). Cowpea waste: A novel substrate for solid state production of amylase by *Aspergillus niger*. *African J. Microbial Research* 3(12) 974-977.
30. Kareem, S. O.; **Akpan, I.** & Alebiowu, O. O. (2010). Production of citric acid by *Aspergillus niger* using pineapple waste. *Malaysian J. Microbiol.* 6(2) 25-30.
31. Kareem, S. O.; **Akpan, I.** (2010). Biosynthesis of fungal amylase in soybean waste medium. *Nigeria Journal of Microbiology* (In Press).
32. Ayolabi, O.; Ojo D.A; Armach, G.E; **Akpan, I** and Mafiana, CF (2010). Detection and partial characterization of novovirus among children with acute gastroenteritis in Lagos, Nigeria. *Intl. J. Med. Medical Sci.* 2 (7): 216-22
33. Shittu, O.B.; **Akpan, I.**; Popoola, T.O.S.; Oyedepo, J.A.; Ogunsola, E.O. (2010) Epidemiological features of a GIS-supported investigation of cholera outbreak in Abeokuta, Nigeria. *J.Pub. Health Epidem.* 2(7):152-162
34. Shittu, O.B.; **Akpan, I.**; Popoola, T.O.S.; Oyedepo, J.A.;(2010). Application of Gis-Rs in bacteriological examination of rural community water supply and sustainability problems with UNICEF assisted borehole: A case study of Alabata community, South-western Nigeria *J.Pub. Health Epidem.* 2(9): 238-244
35. Kareem, S. O.; **Akpan, I.**; Popoola, T.O.S. and Sanni, L.O. (2011). Activated charcoal-A potential material in the recovery of glucoamylase. *Enzyme Research*. In Press.

CONFERENCE PROCEEDINGS

1. **Akpan, I. & Kareem, S.O. (2004)** Pectinase production by *Rhizopus* sp. cultured on cheap agricultural materials. *Proceedings of Intl Conference on Science & National Dev. Abeokuta, Nigeria* Oct. 25th - 28th, 2004. 1:94-96
2. **Akpan, I.** Arowolo, TA, Cole, IBP **(2006)** Plant coagulants: Potential materials for waste water treatment. *Proceedings of UNAAB-AMREC in-House Review Meeting, Abeokuta*, 29-30 Nov. 2005 1:106-112.
3. Ogundele, K, Idowu, M.A., Awonorin, S. O., Atanda, O.O. and **Akpan, I.(2006)** "Effect of processing method on stability of Shear Butter during storage" *Proceedings of 30th Annual Confab, Nigeria institute of Food Science and Technology*. Lagos, Nigeria. 25th — 27th October 2006. Pg. 94 — 95.
4. Ogundele, K, Idowu, M.A., Awonorin, S. O., Atanda, O.O. and **Akpan, I.(2006)** "Effect of processing method on the yield of Shear Butter." *Proceedings of 30th Annual Confab, Nigeria institute of Food Science and Technology*, Lagos, Nigeria. 25th — 27th October, 2006. Pg. 96 — 97.

PATENTS

1. **Akpan, I. & Kareem, S. O. (2002).** Imarsil and Process of Preparation. *Nigerian Patent No. RP 14784*.

15. National Service

Member, National Think Tank Nigeria

16. Previous Period Of Work, Study And Research Abroad

- (i) **International Course in Biotechnology**
MIRCEN (EURASIA) – Centre (1992-1993)
Dept. of Microbiology
Microbial Biotechnology Laboratory
University of Queensland
Brisbane, Australia

Supervisor: Dr. H. W. Doelle

- (ii) **Post-doctoral Fellow (1996-1997)**
Division of Industrial Microbiology
Wageningen Agricultural University
Wageningen, The Netherlands.

Supervisor: Prof. Jan M. deBont

17. Unpublished Conference/Workshop in the last 5 years and paper read

S/N	Conference/Workshop	Date	place	Paper Presented
1.	9 th IUMS Intl. Congress of Mucology	23 rd – 28 th July, 2005	San Francisco, California, USA	Purification of fungal amylase with Imarsil – A novel chromatographic absorbent
2.	Raw Materials Research Development Council Workshop	28 th –20 th March, 2007	Abuja	Cottage level production of glucose syrup from cassava for the food and pharmaceutical industries in Nigeria
3.	Raw Materials Research Development Council Workshop	10 – 13 th Feb., 2009	Abuja	<u>Exhibits</u> (1) Food enzymes (Glucoamylase, amylase) (2) Activated charcoal from palm kernel shell (3) Glucose syrup (4) Ethanol from cassava
4.	Raw Materials Research Development Council Workshop	9 th May, 2009	Abeokuta	Production of Glucose syrup from cassava - A practical guide

18. Current Research and Product Development activities in my Laboratory

1. Value addition to agricultural raw materials



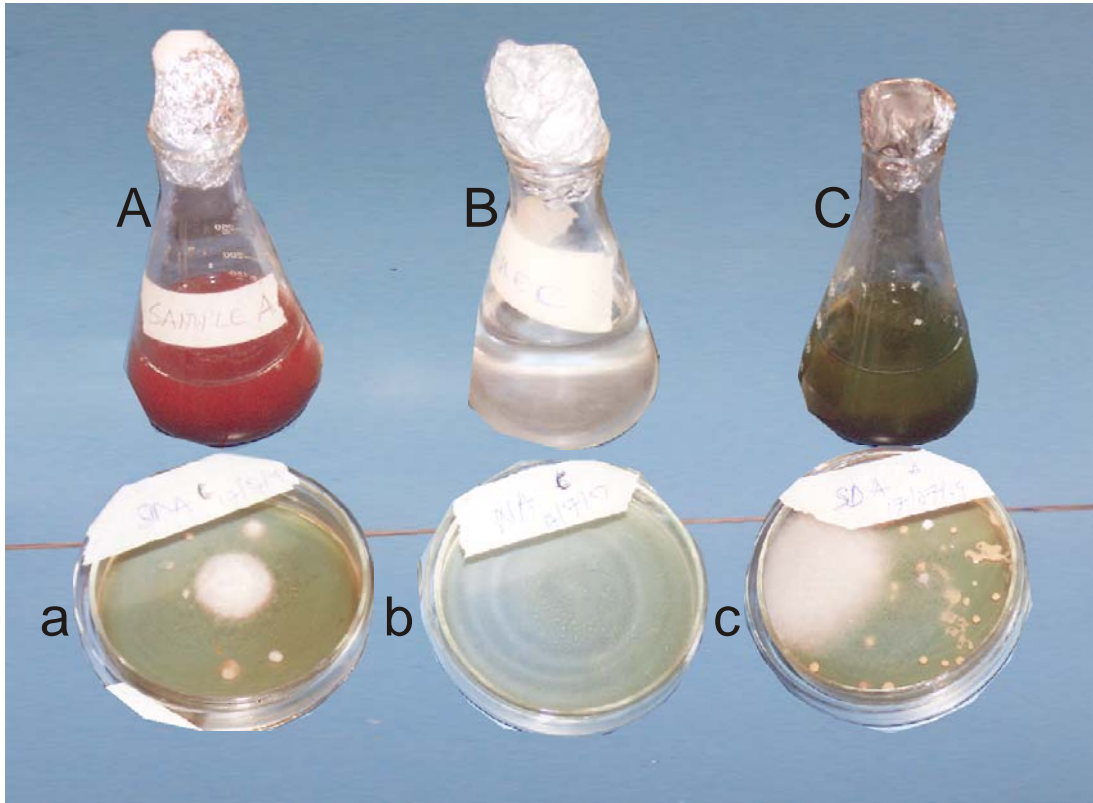
**GLUCOSE SYRUP FROM CASSAVA PRODUCED IN MY LABORATORY
DECOLOURISED USING ACTIVATED CHARCOAL**

2. Development of Bioreactor



**A 10 LITRE GLASS BIOREACTOR + FILTER UNIT DESIGNED AND
FABRICATED IN MY LABORATORY**

WASTE WATER TREATMENT



FISH POND WATER TREATED WITH ACTIVATED CHARCOAL
A - Filter without activated charcoal; B - With activated charcoal; C - Control
abc - Microbial counts after treatment.



ACTIVATED CHARCOAL

19. HOBBIES: Reading. Traveling and Football

20. Names and Addresses of Referees

- | | |
|--|---|
| <p>1. Prof. S. C. U. Nwachukwu
Department of Microbiology
University of Lagos
Lagos
Phone: 080-330-320-91</p> | <p>2. Prof. Jan M. debont
Division of Industrial Microbiology
Wageningen Agricultural University
Wageningen, The Netherlands</p> |
| <p>3. Prof. J. K. Oloke
Department of Pure & Applied Biology
Ladoke Akintola University of Technology
Ogbomosho, Nigeria
080-338-069-81</p> | |

