PICTURES OF BOT

VISION AND MISSION STATEMENTS OF THE LIVINGSCIENCE FOUNDATION

LIVINGSCIENCE FOUNDATION, ILE-IFE

"Science for life more abundant (John 10:10)"

The aim of the *Living*Science Foundation is to enhance public health in Nigeria by facilitating and promoting sound evidence-based, comprehensive and holistically-derived, home-grown environmental-health policies and practices; undergirded by a conviction that an all-wise benevolent Creator designed the world to run sustainably.

The Specific Objectives of the Foundation are to

i. provide an authoritative voice showing that studying and doing Science from a creationist perspective will not only make best sense of our world, it will also yield abundant life for people and the entire ecosystem. This will entail a direct standing up to, and scientific refutation of the currently prevalent evolution theory of origins.
ii. seriously engage in the business of identifying peculiar traditional and modern hazards in the Nigerian environment; scientifically evaluate attendant health risks particularly to identified susceptible, vulnerable and sensitive subpopulations; and widely communicate the findings in society, while advocating for remedial actions as may be necessary.
iii. provide information, education, and advisory services on health and environment to the general public, various tiers of government, and other stakeholders. This may involve undertaking resourced projects and contract works that support the vision of the Foundation.

We welcome your inputs as Partners, Collaborators, and Sponsors. For more details, kindly contact us on +234 805 710 6482, or visit our website at: www.lsfnigeria.org

WHO IS WHO AT THE LIVINGSCIENCE FOUNDATION

WHO IS WHO AT THE LIVINGSCIENCE FOUNDATION -II

PICTURES OF HONOURABLE MINISTER OF HEALTH

AND

HONOURABLE MINISTER OF STATE OF ENVIRONMENT

GOODWILL MESSAGE FROM THE HONOURABLE MINISTER OF HEALTH

[ON HIS OFFICIAL LETTERHEAD]

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~~SPEECH BY THE HONOURABLE MINISTER OF HEALTH, FEDERAL REPUBLIC OF NIGERIA PROFESSOR ISAAC ADEWOLE, FAS, FSPSP, FRCOG, DSc(Hons) AT THE OPENING OF THE THIRD NATIONAL CONFERENCE ON ENVIRONMENT AND HEALTH HELD AT THE REDEEMER'S UNIVERSITY, EDE, OSUN STATE ON WEDNESDAY 16TH OF MAY, 2018~~

~~**PROTOCOL** It gives me great pleasure to address the distinguished participants at the 3rd National Conference on Environment and Health. I heartily congratulate the organizers of the Conference, the LivingScience Foundation, Ile Ife and the Redeemer's University, Ede for selflessly promoting public health, and in particular, emphasising the need for a holistic multi-sectoral discussion for the achievement of sustainable development in Nigeria.~~

~~Distinguished Ladies and Gentlemen, I am particularly delighted to note that this conference is focusing on the theme "ONE HEALTH: A multi Sectoral Approach to Sustainable Development" This theme is very apt and appropriate for the times we are in. The days when each Sector of Society functions largely as self-sufficient entities are forever gone! . Issues like emerging and re-emerging infections, zoonotic diseases, global threat of antimicrobial resistance among others, cannot be handled in silos. The World Health Organization has been promoting the One Health approach in recent years. Only last June, under the auspices of the World Health Organization, Ministers of Human Health, Animal Health and Environment across the West African subregion met to fashion out a co-ordinated multi-sectoral response in the fight against such epidemic diseases as Ebola and Lassa fever.~~

~~Furthermore, late last year, the Federal Ministries of Health, Environment and Agriculture and Rural Development together published the National Action Plan on Antimicrobial Resistance, which is indeed the quintessential example of the One Health concept. Going forward, Government is determined to create inter-ministerial platform for dialogue, policies and action plans and resource mobilization to tackle such inter-sectoral issues. We look forward to further collaborations with organizations in the non-governmental sector, such as the LivingScience Foundation in moving this important agenda forward.~~

Before I end this address, let me quickly share a related cardinal programme at the FMOH with you. It is no longer news that the current administration is focusing on revitalisation of Primary Health Care. We have commenced the first phase of our promise of renovating, equipping and posting of essential medical staff to our newly renovated 110 PHCs (1 model PHC per senatorial district). The European Union will also be supporting revitalisation of 774 PHCs across the country. Our belief is that a functional PHC will effectively handle 70% of all medical consultations and as such, Nigerians would have no business flooding our tertiary facilities for basic medical care. We hope to extend this initiative to all the local government areas and political wards before the end of this government. We are confident that this vision of addressing health at the grassroots, together with a proactive resolution of underlying environmental and lifestyle issues, will drive our country towards universal health coverage.

It is imperative that the non-governmental sector of society join hands with the government to build a forward moving and healthy society. In this respect, I again commend the flourishing town-gown partnerships being spearheaded by the LivingScience Foundation as evidenced by a broad-based conference such as this. I will like to assure that Government is always willing to encourage and support such initiatives wherever they emerge.

And now, finally, it is my pleasure to declare the 3rd National Conference on Environment and Health open to the glory of God and for providing a functional platform to pursue sustainable development in Nigeria via a holistic and multi-sectoral treatment of human, animal, and environmental health issues. I wish you fruitful deliberations and look forward to receiving the communique of this conference.

Thank you and God bless the Federal Republic of Nigeria.

Professor Isaac Adewole, FAS, FSPSP, FR*COG*, DSc(Hons).

Minister of Health

Federal Ministry of Health

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DUMMY VERSION!

WELCOME ADDRESS, PRESIDENT, LIVINGSCIENCE FOUNDATION



On behalf of the Chairman Board of Trustees, Pastor Ezekiel A. Odeyemi (FISL, FCICN, FCIM), and all members of the LivingScience Foundation , I heartily welcome you to this 3rd National Conference on Environment and Health.

The primary purpose of the National Conference on Environment and Health series is to present a strategic platform where major stakeholders from the Academia, Government MDAs, Industry, and Civil Society can interact, and address and proffer the direly-needed home-grown solutions to salient Environment-Health issues in the country. This 3rd edition follows previous editions successfully held in 2016 and 2017 (http://conferences.lsfnigeria.org); but it is unique in that it is now directed by an independent Steering Committee comprised of very eminent and distinguished stakeholders in the environment-health sector.

The LivingScience Foundation gratefully acknowledges the humility and passion of this cream of celebrated professionals who have decided to offer the selfless, unremunerated, and largely "thankless" services of forging an alliance whose dividends to society, though certain to come, might as well take some time to become apparent.

We also sincerely appreciate the supports and encouragements received across the various levels and cadres in the Federal Ministry of Environment and her Agencies (in particular NESREA); as well as in the Federal Ministries of Health, and of Agriculture and Rural Development. We particularly salute the leadership and indeed the entire family of the Redeemer's University for their unflinching support for a Project conceived, birthed, and nurtured under the congenial and anointed atmosphere of the Institution.

In line with the core vision of the LivingScience Foundation to permeate all segments of society with the message of responsible care of the environment for the realization of sustainable development and life more abundant, this third edition of the Conference now includes an educative Quiz competition for high school students, an Essay competition for Undergrads, and Best Abstract competition for postgraduate students. Furthermore, to recognize and honour (often silent) achievers who have been contributing sacrificially to the concept

of sustainable development in the country, the Conference has now incorporated the AF Oluwole Prize for Environment-Health. Prof A.F. Oluwole (NNMA, FNIP) himself worked tirelessly over the decades, working from his background in nuclear physics, to define and nurture the sometimes confusing field of environment-health.

Above all, we thank you for taking the time to come participate in this burgeoning high-impact conference. Please enjoy yourself these two wonderful days.

Joshua O. Ojo (PhD)
Professor of Health Physics and Environment, Obafemi Awolowo University, Ile-Ife; and
President, LivingScience Foundation, Ile-Ife
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3rd National Conference on Environment and Health
Redeemer's University, Ede. May 16-17, 2018

Theme: ONE HEALTH: A MULTI-SECTORAL APPROACH TO SUSTAINABLE DEVELOPMENT

PROGRAMME SCHEDULE

Day 1: Wednesday 16th May

09.00 – 09:50	Pre-Opening Activities: Mount Posters and Exhibitions.
09:50 – 13:20	**PLENARY SESSION I: Formal Opening Ceremonies** Chairman, **Prof S.R.A. Adewusi** Profesor of Chemistry [Nutrition and Environment] Obafemi Awolowo University, Ile-Ife Rapporteur: *To be announced*
09:50 – 10.00	**Opening** Opening Prayer**.** National Anthem. Redeeemer's University Anthem - **RUN Chaplaincy**
10:00 – 10:10	**Introductions – Dr A.S. Oginni** (Secretary, Steering Committee of the National Conference on Environment and Health)
	Welcome Addresses:
10.10 – 10.20	**Prof Debo Adeyewa**, Vice Chancellor, Redeemer's University, Ede
10.20 – 10.30	**Pastor Ezekiel Odeyemi** (FISL, FCICN, FCIML), Chairman, Board of Trustees, LivingScience Foundation, Ile-Ife
10.20 – 10.30	**Opening Remarks** – Chairman, **Prof S.R.A. Adewusi**
10.30 – 10.40	**Special Address**: Honourable Minister of Health (**Prof Isaac Adewole**)
	Goodwill Messages:
10.40 – 10.50	Honourable Commissioner for Environment and Sanitation, Osun State. **Sanitarian (Chief) Idowu Michael Korede**
10:50 – 11:00	Honourable Commissioner for Health, Osun State, **Dr Rafiu Isamotu**
11:00 – 11:10	Registrar, Environmental Health Officers Regulatory Council of Nigeria (EHORECON), **Dr Dominic Abonyi** (Represented by San Isah Adamu, EHORECON Hqtrs, Abuja)
11:10 – 11:20	DG, National Environmental Standards and Regulations Enforcement Agency (NESREA) – **Dr Lawrence Anukam**. (Represented by South West Zonal Director, NESREA, Ibadan. Mr Adeleke Ajani)
11:20 – 11:25	South West Regional Director, Federal Ministry of Agriculture and Rural Development (FMARD), Ibadan - **Mr Joseph Ogunwale** (Represented by Osun State Director FMARD, Engr Atoyebi)
11:25– 11:30	Chairman, Committee on Environment, Osun State House of Assembly, Osogbo, **Honourable (Prince) Ajibola Akinloye**
11:30 – 11:45	**Refreshment/Tea Break**

	Keynote Address:
11.45 – 11:55	Citation of Speaker: **Mrs Toyin Ikuteyijo**
11.55 – 12:40	*ONE HEALTH: A MULTI-SECTORAL APPROACH TO SUSTAINABLE DEVELOPMENT* **Prof A.A. Onayade**, Director, Institute of Public Health, OAU, Ile-Ife
12:40 – 12:55	Interactions. Questions and Answers
12.55 – 13:15	**Prizes and Award – Dr (Mrs) O. B. Emma-Okon** i. Quiz Competition for Secondary Schools ii. Essay Competition for Undergraduates – **Winner: Obidare Ololade Anthonia,** National Open University of Nigeria, Abuja iii. Best 3 Abstracts submitted by Students iv. A.F. Oluwole Prize for Environment-Health – **Winner: Prof M.K.C. Sridhar**, College of Medicine, University of Ibadan, Ibadan.
13:15 -13.25	**Chairman's Closing Remarks – Prof S.R.A. Adewusi**
13:25 – 13:30	**Vote of Thanks** – **Prof Dipo Aboderin**. (Chairman, Steering Committee of the National Conference on Environment and Health).
13:30 – 13:40	**Closing Prayer. National Anthem - RUN Chaplaincy**
13.40- 14:00	**Group Photographs./Networking**
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14:00 – 15:00	**Lunch / Press Conference**
15:00 – 18:30	*Afternoon session:*
15:00 – 17:30	**PLENARY SESSION II:** Chairman: **Prof M.K.C. Sridhar** Department of Environmental Health, College of Medicine, UCH, Ibadan Rapporteur: *To be announced*
15:00 – 15:40	**Dr Kingsley.K. Akinroye**, Executive Director, Nigerian Heart Foundation, Lagos. NON-COMMUNICABLE DISEASES AND SUSTAINABLE DEVELOPMENT IN NIGERIA
15:40 – 15:50	Interactions. Questions and Answers
15:50 – 16:30	**Mr Oluwasesan H. Joshua**. SEEMS Nig. Ltd, Lagos DETERMINATION OF CO, NO_2 AND PM POLLUTANT CONCENTRATIONS FROM VEHICULAR EMISSION ALONG A MAJOR HIGHWAY IN LAGOS METROPOLIS
16::30 – 16:40	Interactions. Questions and Answers
16:40 – 17:20	**Dr (Mrs) Taiwo Odubela**. Retired Director, Environmental Assessment Department, Federal Ministry of Environment, Abuja

SYNERGY BETWEEN EIA ACT AND PHYSICAL PLANNING LAWS: A MUST FOR SUSTAINABLE DEVELOPMENT IN NIGERIA

17:20 – 17:30 Questions and Answers.

17:30 – 17:45 Break. Networking

17:45 – 18:30 Cocktail with Vice Chancellor, RUN.

18:30 Closing and Networking

Day 2: Thursday 17th May, 2018

09:00 – 10:40 **PLENARY SESSION III**
Chairman**: Prof Ademola Omishakin**, (Professor of Public Health and Fullbright Scholar). Dean, Faculty of Basic Medical Sciences, Adeleke University, Ede
Rapporteur: *To be announced*

09:00 – 9:40 **Prof Aaron O. Aboderin**. Department of Medical Microbiology and Parasitology, Obafemi Awolowo University, Ile-Ife.
ANTIBIOTICS USE IN ANIMAL AND HUMAN HEALTH IN NIGERIA: VOLUMES AND IMPLICATIONS

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9:40 – 09:50 Interactions. Q&A

09:50 – 10.30 **Dr Ephraim Ogbaini-Emovon**. Director, Institute of Lassa Fever Control, Irua, Edo State
EMERGING AND RE-EMERGING DISEASES AND THE CHALLENGE OF SUSTAINABLE DEVELOPMENT

10.30 – 10:40 Interactions. Q&A

10:40- 11:30 **PLENARY SESSION IV**
Chairman **Mr Adeleke I. Ajani**. Director, NESREA, SW Zone, Ibadan
Rapporteur: *To be announced*

10.40 – 11:20 **Dr Israel O. Otemuyiwa**. Senior Lecturer, Department of Chemistry, Obafemi Awolowo University, Ile-Ife
FEDERAL GOVERNMENT OF NIGERIA SCHOOL FEEDING PROGRAMME POLICY: ACHIEVEMENTS, CHALLENGES AND POSSSIBLE IMPROVEMENT - OSUN STATE AS A CASE STUDY

.20 – 11:30 Interactions. Q&A

11:30 – 11:45 Tea Break/ **Interaction at stands for POSTERS AND EXHIBITION**

11:45– 13:15 **PARALLEL SESSION: 3 LOCATIONS**
(Chairmen and Rapporteurs to be announced later)

13:15 – 14:00 LUNCH

14:00 – 14:50 **PLENARY SESSION V**
Chairman: **Honourable (Prince) Ajibola Akinloye**, Chairman, Committee on Environment. Osun State House of Assembly, Osogbo
Rapporteur: *To be announced*

14:00 – 14:40 **Dr Adeniyi Oginni**, Executive Secretary, Osun Health Insurance Agency, Osogbo
NEED FOR RISK ASSESSMENT, HEALTH INSURANCE, AND REALISTIC ENVIRONMENT-HEALTH STANDARDS IN ACHIEVING SUSTAINABLE DEVELOPMENT

14:40 – 14:50 Interactions. Q&A

14:50 – 15:40 **PLENARY SESSION VI**
Chairman **Prof O.G. Adeyemi**, (Professor of Chemistry). Dean, College of Natural Sciences, Redeemer's University, Ede
Rapporteur: *To be announced*

14:50 – 15:30 **Alhaji Ganiyu O. Oyeladun**, General Manager, Osun Waste Management Agency, Osogbo
15:30 – 15:40 Interactions. Q&A

15:40 – 16:40 **PLENARY VII**
Chairman: **Prof Joshua Ojo**. (Professor of Health Physics and Environment). President, LivingScience Foundation, Ile-Ife
Rapporteur: *To be announced*

15:40 – 16:40 Refreshment
15:40 – 16:40 Communique and Closing

Time	DAY 2 AT A GLANCE	
09:00 – 10:40	**Prof Aaron O. Aboderin**. ANTIBIOTICS USE IN ANIMAL AND HUMAN HEALTH IN NIGERIA: VOLUMES AND IMPLICATIONS	
9:40 – 09:50	Interactions. Q&A	
09:50 – 10.30	**Dr Ephraim Ogbaini-Emovon**. Director, Institute of Lassa Fever Control, Irua, Edo State EMERGING AND RE-EMERGING DISEASES AND THE CHALLENGE OF SUSTAINABLE DEVELOPMENT	
10.30 – 10:40	Interactions. Q&A	
10:40- 11:20	**Dr Israel O. Otemuyiwa**. Senior Lecturer, Department of Chemistry, Obafemi Awolowo University, Ile-Ife FEDERAL GOVERNMENT OF NIGERIA SCHOOL FEEDING PROGRAMME POLICY: ACHIEVEMENTS, CHALLENGES AND POSSSIBLE IMPROVEMENT - OSUN STATE AS A CASE STUDY	
11.20 – 11:30	Interactions. Q&A	
11:30 – 11:45	Tea Break/ **Interaction at stands for POSTERS** **ADEBOLU O. A., ALADESANMI, O.T. and AWODIRAN, M.F.** Evaluation of Nickel-Induced Genotoxicity and Histopathological Alterations in the Liver of Clarias gariepinus Burchell 1822 Post-juveniles **Joshua O. Ojo[1+], Oluwatosin Ijaleye[1], Tolulope Ebire[1] and Darja Mazej[2]** Preliminary investigations of lead dynamics in blood and milk of lactating Nigerian subjects Osuolale Peter Taiwo. Modelling of soil temperature with depth and implications for sustainable development **AND EXHIBITION:** **[1]F. I. AMOO, [2]J.O. OLALERE** Design and Economic Analysis of Biogas Power Plant as a Refuse Use	
11:45-13:15	SESSION 1: MATHEMATICAL:	SESSION II: BIOCHEMICAL
	Karokatose, T.E1*et al Model Evaluation by Comparison of Model-Based Predictions and Measured Values of Lead in Blood and Milk of Women in Polluted Environment **Oguntona K.B and Ogundare F.O**. Thermoluminescence kinetic parameters of LiF:Mg,P **O. O. Adejumo[1*] et al** · MATHEMATICAL FRAMEWORK FOR THE DEVELOPMENT OF A COMPTON SCATTERING TOMOGRAPHIC SYSTEM **MORAKINYO, Oluwatoyin A**. A COMPARATIVE STUDY OF GROUND LEVEL OZONE POLLUTION IN LAGOS AND SOKOTO, NIGERIA USING SATELLITE-DERIVED DATA. **[1]Omowaye Oluwatoyin Ayodele**, et al. Enviromental Impact of Burnt Municipal Solid Wastes on Vegetation in Ekiti State, Nigeria **Ojo J.O. et al.** Comparison of the absorbed dose in brain for Hg in children from regular exposure routes and from thimerosal-containing vaccines	**N.N. Jibiri¶ and S.O. Abuh**. RADIOLOGICAL IMPACT OF LOCALLY PRODUCED LAUNDRY SOAPS AND DETERGENT POWDERS ON USERS IN NIGERIA **C.U. NWANKWO et al**. Radioactivity in Cosmetic Powder N.N. Jibiri¶ and Tolulope Babarinde. RADIOLOGICAL IMPACT OF SOME QUARRY SITES ON AGRICULTURAL FARM SOILS IN IBADAN **N.N. Jibiri¶ and B..O. Ogunyanju**. CONSUMPTION OF FOOD CROPS FROM FARMLANDS AROUND SOME QUARRY SITES AND ITS RADIOLOGICAL HEALTH IMPLICATIONS TO THE LOCAL POPULATION IN IBADAN **Inuyomi Samuel; and Joshua Ojo**. Determination of Gamma-emitting Radionuclides in some Selected Vegetables from High and Low Cancer Prevalence Areas in Ondo, Southwest Nigeria
11:45-13:15	SESSION III: POLICY AND SOCIO-	SESSION IV: BIOCHEMICALS

	ECONOMICS	
	J.O. Ojo and I.A. Ajani. Need for re-examination of Nigeria's current standards and regulations on Microwave radiation in telecommunication **O.R. Ogunoye**. The Case For Popular Culture In Achieving Sustainable Development In Africa: The Example Of Video Film In Nigeria **Ikuteyijo O.O. And Awoleye A** . Demographic And Environmental Risk Factors Associated With Acute Respiratory Infections Among Children Under Five Years Of Age In Nigeria **I.O. Otemuyiwa[1] et al** Federal Government of Nigeria School Feeding Programme Policy: Achievements, Challenges and Posssible Improvement - Osun State as a Case Study **J.O. Ojo and Samuel Inuyomi**. Implications and required actions consequent to Nigeria's ratification of Minamata Convention	**P.O .Abiodun, et al.** Impacts of Effluents from a Beverage Bottling Company on Morpho-Physiological Characteristics of Vigna unguiculata Walp grown in a Controlled Environment **O.T. Aladesanmi, et al** . Water Quality Assessment of Atutulala Stream, Kola Village, Modakeke, Ile-Ife. **Adeniyi I..F.[1] and Akinwumi I..T..** Physico-Chemical Quality Of Groundwater In The Vicinity Of Municipal Solid Waste Dump Sites In Osogbo, Southwestern, Nigeria**.** **Oghenetega J. A. et al..** Biochemical characterisation of alpha amylases isolated from fresh and dried Cyperus esculentus: Kinetics and thermodynamics studies **O. E. Ayegbusi, et al**. Evaluation of Oxidative stress in African Catfish Clarias gariepinus (burchell, 1822) Exposed to Varying Concentrations of Lead Chloride **Awotunde, I. O**., et In-Vitro Evaluation of Potential Hepatotoxicity Induced By Detergent-Processed Cassava Product **Femi AYOADE and Samuel AMONA**. Deterioration and Microbiological Evaluation of Information bearing Paper at Redeemer's University
13:14 – 14:00	LUNCH	
14:00 – 14:40	**Dr Adeniyi Oginni**, Executive Secretary, Osun Health Insurance Agency, Osogbo NEED FOR RISK ASSESSMENT, HEALTH INSURANCE, AND REALISTIC ENVIRONMENT-HEALTH STANDARDS IN ACHIEVING SUSTAINABLE DEVELOPMENT	
14:40 – 14:50	Interactions. Q&A	
14:50 – 15:30	**Alhaji Ganiyu O. Oyeladun**, General Manager, Osun Waste Management Agency, Osogbo	
15:30 – 15:40	Interactions. Q&A	
15:40-16:40	REFRESHMENT	
15:40-16:40	***OJO, J.O***. COMMUNIQUE AND CLOSIING	



PROF S.R.A. ADEWUSI. Prof of Chemistry, OAU, Ile-Ife.

PROFILES

PROF. DEBO ADEYEWA



Prof Zachs Debo Adeyewa, the Vice Chancellor of the Redeemer's University, Ede, obtained his first and second degrees in Physics/Meteorology at the Obafemi Awolowo University, Ile-Ife, Nigeria between 1981 and 1989. His PhD programme sponsored by the International Program in the Physical Sciences, Uppsala University, Sweden, was between 1990 and 1997 in collaboration between the Uppsala University, Sweden and the Obafemi Awolowo University, Ile-Ife, Nigeria. Professor Adeyewa was an Associate of the Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, a Guest Scholar in Sweden (sponsored by the Swedish Institute, Stockholm). He was also a visiting scientist (Center of Excellence Fellowship) at the Nagoya University, Japan. Professor Adeyewa was an auxiliary faculty at the Department of Meteorology, University of Utah, Salt Lake City, USA between 2004 and 2007. He has been at the Federal University of Technology, Akure since October 1989 where he served in different capacities, including Deputy Vice Chancellor, until his assumption as Vice-Chancellor at the Redeemer's University on October 1, 2011. The present research effort of Professor Adeyewa is on the study of the characteristics of the different climatic regions of Africa using data from the assorted instruments on the Tropical Rainfall Measuring Mission (TRMM) satellite and other space-borne remote sensing platforms. He has also been using satellites and other remote sensing facilities to map, capture and predict the characteristics of African vegetation and climate. His main goal is seeking alternative methods of providing reliable data for a better scientific understanding of the Africa environment. He believes that remote sensing

technology is the best solution for overcoming the formidable problem of gaining adequate temporal and spatial access to the vast data-sparse regions in Africa Prof Adeyewa is happily married with children.

PROF ABIODUN F. OLUWOLE



Prof A.F. Oluwole was born in September 1939 at Ijare, Ondo State. He joined the services of the then University of Ife (now Obafemi Awolowo University), Ile-Ife in 1969 as a Lecturer I and rose to become a Professor in 1978. Between 1975 and 1976 he served as the acting Head, Department of Physics, after which he became the Coordinator of the University's Nuclear Technology Programme (1976 – 1980). The Programme gave birth to the Centre for Energy Research and Development (CERD), where Prof Oluwole served as the pioneering Director (1980 to 1983). Prof Oluwole not only raised the profile of research on the Nigerian environment by attracting several multi-million dollars international fundings for pioneering original research, he also spearheaded the introduction of the Health Physics and Environment option into the postgraduate programmes at the Obafemi Awolowo University, Ile-Ife.

Outside the Obafemi Awolowo University, Prof A.F. Oluwole held various teaching and research positions at several academic institutions including the University of California, Berkeley, (1964/65, 1969), University of Heidelberg FRG (1971), University of Sussex (1970), University of Washington, Seattle, (1972), Columbia University (1974), McMaster University, (1977).Federal University of Technology, Akure, (1984/85), Nuclear Research Center, Washington State University, Pullman (1985, 1991), University of Surrey, (1989, 1990, 1992, 1993, 1994) and University of Stuttgart, FRG (1989, 1990, 1992, 1993, 1994)

Apart from teaching and research, the meritorious services of Prof A.F. Oluwole include membership of**:** Federal Panel on Ionising Radiation (1970 to 1990); Natural Sciences Research Council Committee on the National Institute of Nuclear Sciences (1975); FMST's Review Panel on National Policy on Science and Technology (1983). National Panel on Integrated Energy Policy for Nigeria by Ministry of petroleum and Energy 1984, Energy Panel on National Nuclear Centre and Science village, Abuja by FMST, 1987., Energy Commission of Nigeria (2001). Prof Oluwole was also a member of the International Atomic Energy Agency (IAEA) Committee on Nuclear Information Services (1982), and Nuclear Data (1993).

Prof Oluwole was inducted a fellow of the Nigerian Institute of Physics in 1996. He is a member of several professional bodies, including the Tau beta Pi-American National Honour Engineering Society (1964), American Physical Society (1968), American Association of Physics Teachers (1968), Science Association of Nigeria (1970), West African Science Association (1970), Nigeria Institute of Physics (1974), New York Academy of Sciences (1980), and the American Nuclear Society (1982), American Association for the Advancement of Science (1996).

He has authored/edited several important books and Monographs, including

- Twenty five years of Nigerian History – Volume XI: Science and Technology – Heinemann Press, 1990 eds. A.F. Oluwole & O. Awe, 587 pp. (Prof. Tamuno-General Editor.)
- "National Inventory of Greenhouse Gases and Toxic Air Pollutants in Nigeria" Eds. Obioh I.B., Oluwole A.F.., Akeredolu, F.A. and Asubiojo, O.I. 300pp Ilupeju Press. (1995).

Additionally he has over eighty scholarly articles in reputable local and international journals. Among the several important Special Reports authored/co-authored by Prof Oluwole are:

- Ogunseye, Olaniyan C.I., Oluwole A.F., Emovon, E.V., et al. Outline of Science and technology Policy for Nigeria". Federal Ministry of Science and Technology (1980-83).
- Oluwole, A.F. and Adegoke, O.S. "The Structure of the Federal Ministry responsible for Energy Mineral Resources and Technology" 15pp. Commissioned by SHQ. (1983).
- Oluwole, A.F. "Structure of National Nuclear Centre and Science Village, Abuja" 30pp commissioned by the Head of State (1987)
- Adegoke O.S., Iya Abubakar, Oluwole A.F. et al (2008) Presidential Committee on the Actualization of the Proposed Science & Technology Research Development Fund" 110pp.

An accomplished scholar, Prof Oluwole was awarded the Nigerian National Order of Merit (NNOM) for Science in 2004. Among over a dozen other prestigious awards received by Prof A.F. Oluwole are the Doctor of Science *(Honoraris Causa)* from the Federal University of Technology, Akure (2006) and the Adekunle Ajasin University, Akungba, Ondo State (2008).

LAWRENCE CHIDI ANUKAM, PHD



Dr. Lawrence Chidi Anukam was the most senior Director and the Acting Director General of the National Environmental Standards and Regulations Enforcement Agency (NESREA) before his appointment as the substantive Director General of the Agency. Until the appointment, he was the Director of Planning and Policy Analysis at the NESREA Headquarters. His responsibilities included the development and coordination of short-, mid-, and long-term strategic action plans of the Agency; coordination of policy analysis and research; data and information management system, including public education and awareness; development and implementation of environmental regulations and standards; identifying and building partnerships at local and international levels; coordination of public/private sector engagements, including civil society involvement; liaising and following up activities on inter-governmental and inter-ministerial matters at federal and state levels; organization of special seminars, workshops and conferences; and any other special duties assigned from time to time by the Director General.

Before joining NESREA, Dr. Anukam was the Head of the Department of Programme Development and Implementation at the National Office of the New Partnership for Africa's

Development (NEPAD), in the Presidency. And before that, he was the Special Assistant to the Senior Adviser to the President on NEPAD and the Head of NEPAD Nigeria. He was deeply involved in the development, promotion, domestication and operationalisation of the implementation of NEPAD programmes in Nigeria.

Dr. Anukam was a management staff of Nigeria's Federal Ministry of Environment in the Department of Environmental Assessment, where he assisted in the development and updating of national environmental guidelines and standards, including environmental indicators and environmental management tools such as Environmental Management System and Environmental Auditing. He was a member of the Core Secretariat of the National Committee for the Implementation of Nigeria's Environmental Action Plan (the National Agenda 21) and Follow-up on the Activities of the United Nations Commission on Sustainable Development (CSD). He assisted in coordination and facilitation of bilateral and multilateral activities between Nigeria and the international community in the area of environment and sustainable development. He was the National Focal Point of the water component of the Global Environmental Monitoring System (GEMS/Water) of the United Nations Environment Programme (UNEP).

Dr. Anukam served as the Chief Facilitator and Deputy Coordinator of the Nigeria's Preparatory Committee for the Ten-Year Review of the United Nations Conference on Environment and Development (UNCED), and for the World Summit on Sustainable Development (WSSD) held in Johannesburg, South Africa in August/September 2002. He coordinated the preparation of Nigeria's Country Reports to various sessions of the United Nations CSD. He chaired the first international meeting of all National Focal Points of the United Nations CSD National Environmental Reporting Programme held at the United Nations Headquarters in New York in February 2002.

Dr. Anukam has served in various intergovernmental and United Nations processes and initiatives. He was a Research Fellow and an Associate Adviser to the Under-Secretary General of the United Nations and Secretary-General of UNCED. He served in the UNCED Secretariat in Geneva, Switzerland during the preparation for the Earth Summit, held in Rio de Janeiro, Brazil in 1992. He assisted in the preparation of the global Agenda 21 and other UNCED documents in the freshwater and health sectors. He was actively involved in the organization and facilitation of international meetings and negotiations during the UNCED process, including the Preparatory Committee (PREPCOM) sessions held in Nairobi, Geneva, and New York, and at the Earth Summit in Rio de Janeiro in 1992. He acted as UNCED Liaison Officer for the Nigerian Government, and as a Personal Assistant to a former President of Nigeria during the Earth Summit. (The former President was then a member of the UNCED Eminent Persons Group). He was also a Special Assistant to the President of the 12th Session of the United Nations Environmental Programme (UNEP) Governing Council.

Dr. Anukam served in the Secretariat of the United Nations International Conference on Water and the Environment (ICWE) at the Headquarters of the World Meteorological Organisation (WMO), in Geneva, Switzerland. He coordinated the participation of Intergovernmental and Non-governmental Organisations at the ICWE held in Dublin, Ireland in January, 1992. The ICWE provided input to the freshwater component of the UNCED process. He was a member of the World Health Organisation (WHO) Expert Group on the Review of Global Water-drinking Quality Standards in 1993.

Dr. Anukam also had some stint in academics. He was a Lecturer at the College of Environmental Studies, Kaduna Polytechnic, Kaduna, Nigeria. He was part of the team that pioneered the development of Ordinary National Diploma (OND) and Higher National Diploma (HND) programmes in Environmental Management at the Polytechnic. He was Chairman of the Committee for Restructuring of the National Diploma and Higher National Diploma Programmes of the Department of Environmental Science, Kaduna Polytechnic, and Departmental Nominee to the Accreditation Process at the National Board for Technical Education (NBTE). He was a Graduate/Research Assistant and Part-time Lecturer at the Wilfrid Laurier University under the Joint Graduate Programme of the University of Waterloo and Wilfrid Laurier University, Waterloo, Ontario, Canada.
Dr. Anukam has served as Technical Expert to some international organisations, including the United Nations Environment Programme (UNEP), World Health Organisation (WHO), World Meteorological Organisation (WMO), and the United Nations (UN). He is a member of various professional bodies, including the American Chemical Society (Environmental Science and Technology Division); Institution of Environmental Science, London; Nigerian Environmental Society; Institution of Water and Environmental Management, London; and International Water Resources Association. He serves on the Board of the Commonwealth Human Ecology Council (Nigeria Chapter).

Dr. Anukam has travelled widely. He has participated and presented many technical papers in various international meetings, conferences and workshops. He has represented the Federal Government of Nigeria at various national, sub-regional, regional and global fora. He was Head of the Nigerian Delegation to the First Preparatory Meeting (PrepCom) of the United Nations Rio+20 Summit. He has served on several National and International Committees on environment and environment-related matters. He is a member of the Governing Board of the Environmental Crime Programme of the International Criminal Police Organisation (INTERPOL). He is very experienced and has vast knowledge on national, regional and global environmental and sustainable development issues.

Dr. Anukam hails from Owerri, Imo State, Nigeria. He had his primary education at Christ Church School, Owerri, and his secondary education at Government Secondary School, Owerri, and Government College, Umuahia. He has a Bachelor of Science Degree (B.Sc.) in Chemistry from the University of Lagos, Lagos, Nigeria; and a Master of Science Degree (M.Sc.) in Environmental Pollution Control from the University of Leeds, Leeds, England. He has a Doctor of Philosophy Degree (PhD.) in Applied Geography (Natural Resources Management) from the Wilfrid Laurier University, Waterloo, Canada, under the joint programme with the University of Waterloo, Ontario, Canada; and a Certificate in Strategic Management of Regulatory and Enforcement Agencies from the Harvard University, Cambridge, Massachusetts, USA. He has attended many professional courses on environment and environment-related issues.

Steering committee members



Aaron Oladipo Aboderin is Professor of Clinical Microbiology and Parasitology at the Obafemi Awolowo University, Ile-Ife. He is also Consultant Clinical Microbiologist at the Obafemi Awolowo University Teaching Hospitals Complex since 2000 where he coordinates the Residency Training programme for the institution. For many years Prof Aboderin was the Head of the Department of Medical Microbiology and Parasitology. He also served two-terms as Deputy Provost, College of Health Sciences, Obafemi Awolowo University..

He is involved with the training and examination of a large number of students and resident doctors in clinical microbiology all over the country. He was acknowledged as having been a major contributor to the National Action Plan for Antimicrobial Resistance 2017-2022 jointly commissioned by the Federal Ministry of Agriculture and Rural Development, The Federal Ministry of Environment, and The Federal Ministry of Health, The Primary focus of his research is on epidemiology of enteric infections and antimicrobial resistance and has over 50 peer-reviewed journal articles. He chairs the Steering Committee of the National Conference of Environment and Health.

DR. ADENIYI SAMUEL OGINNI



Dr. Adeniyi Samuel Oginni; M.B.Ch.B; MPH; Ph.D. is a public health physician, environmentalist, human rights activist, university lecturer and public opinion leader. He is a fellow of the World Health Organisation (WHO) Field Epidemiology Training Scheme. Also a fellow of the Emerging Leaders' Programme of the World Heart Federation (WHF), a presidential initiative to reduce cardio-vascular diseases morbidity and mortality by 25% by the year 2025. He is working on Tobacco Control through advocacy for 100% smoke-free legislations, especially in African countries. He is currently in a collaborative research with other WHF Emerging Leaders across the globe, assessing compliance of hospitality facilities in Kampala with the 100% smoke-free law of the government of Uganda.

Dr. Oginni is the Executive Secretary, Osun State Health Insurance Agency currently supported by the World Bank with a view to achieving universal health coverage in Osun State, Nigeria. He is a past chairman of the Osun state chapter of Nigerian Medical Association and presently chairs its Committee on Environment. He is the Chairman of Osun state chapter of Nigerian Environmental Society (NES) and President of Christian Initiative for Nation Building (CINB), an NGO registered with the Corporate Affairs Commission of the Federal Republic of Nigeria with health promotion and disease prevention as one of its thematic focus and member of the Non-Communicable Diseases (NCDs) Nigeria Alliance. Dr. Oginni sits on the Boards of Community Building and Development Initiative (CBDI) and Network of Non-governmental Organisations in Osun State (NETNOS).

In the past 29 years he has been involved in many public health promotion and legislative advocacy programmes within government establishments as well as Non-Governmental Organisations which yielded positive results. Some of the results include, but are not limited to the enunciation of an HIV/AIDs policy for Osun state in 2003, the enactment of a law abrogating female genital cuttings (female circumcision) by the Osun State House of Assembly in 2007 and the enactment of Osun State Prohibition of Smoking in Public Places Act in 2009 which was achieved through the collaborative efforts of the Nigerian Heart Foundation (NHF) and the Nigerian Medical Association during his tenure as Chairman of the association. The bill prohibits smoking in cinemas, theatres or stadia, medical establishments, hotels, offices, schools and public transport thus safeguarding citizens from exposure to air pollution with environmental tobacco smoke.
His research interest is in workplace safety. His doctoral thesis assessed the health of metal smelters in a fast growing steel recycling factory with a view to providing evidence needed to advocate for better environmental and safety management in the industry. His other areas of expertise include management and leadership development. Dr Oginni is the Secretary to the Steering Committee of the National Conference on Environment and Health.



Dr Beatrice Oluyomi Emma-Okon is a Senior Lecturer and the Acting Head of Department of Medical Biochemistry, College of Health Sciences Obafemi Awolowo University Ile-Ife. Her area of Research are Lipids in Health and disease and Pathophysiology of Type 2 Diabetes Mellitus. She is a member of the Nigerian Society of Biochemistry and Molecular Biology, American Association for Clinical Chemistry and American Society of Biochemistry and Molecular Biology. Mrs Emma-Okon is the Treasurer to the Steering Committee on Environment and Health.

IKUTEYIJO Oluwatoyin is a doctoral student in Department of Demography and Social Statistics, Obafemi Awolowo University Ile Ife Osun State Nigeria. Her research interests are in the areas of Domestic Violence, Environmental Health, Child and Adolescent Health. A Fellow of the Ife Institute of Advanced Studies, Mrs Ikuteyijo serves on the Board of Advisers of the LivingScience Foundation.

Folorunso OGUNDARE had his PhD degree in Physics (radiation and solid state) from the University of Ibadan. He had served as head of the Physics Department and of other Units including the then Federal Radiation Protection Services within the University, until his present appointment as Dean of the Faculty of Science at the University. He is widely travelled and has published scores of peer-reviewed articles in both local and international journals. He is the editor -in-chief of the Nigerian Journal of Environment and Health published by the LivingScience Foundation.



Mr Ismail Adeleke Ajani

Mr. Ismail Adeleke Ajani was born on the 4th of January, 1960 in Osogbo, Osun State to the family of Alhaji and Madam R. A. Ajani. He had his elementary School education at St. Michael Primary Iyin-Ekiti and John Mackay Primary School Osogbo; while he had his Secondary Education
at Doherty Memorial Grammar School Ijero- Ekiti and Ado Grammar School. He further went through Higher School Education at Ondo High School in Ondo State, He gained admission to University of Ife (now Obafemi Awolowo University (OAU) Ile-Ife to study Agriculture(Plant Science) in 1981. Mr. Ajani bagged the Bachelor of Agriculture (B.Agric.) in 1985 and did his NYSC Primary Assignment at Nigerian Agricultural and Cooperative Bank Owerri, Imo State. In his quest for academic excellence, Mr. Ajani bagged Master of Science (M.Sc.)Agriculture in 1992 from University of Ibadan (UI).

He started his working career as a Classroom Teacher at National College, Lagos and later joined the Federal Civil Service(Federal Ministry of Agriculture) in 1993. The establishment of Federal Ministry of Environment in 1999 saw Mr. Ajani becoming an Environmental Scientist when his department was moved from Federal Ministry of Agriculture to Federal Ministry of Environment. While in the Ministry of Agriculture & Environment, Mr. Ajani demonstrated high sense of responsibility, honesty, dedication, loyalty, hard work and commitment to the extent that he was assigned additional responsibility of an Administrative Officer.

Mr. Ajani was among the Pioneer Staff of the National Environmental Standards and Regulations Enforcement Agency (NESREA) in 2007. Between 2008 and 2015, Mr Ajani served as the Ekiti State Coordinator, and he became the Zonal Director, Southwest Zone of NESREA from July, 2015 to date.

Mr Adeleke Ajani has attended several International Conferences and Trainings both within and outside the country on Environment with interest and vast experience in Compliance Monitoring and Enforcement, Industrial Ecology, Forest Resource Management, Biodiversity Conservation and Management, Environmental Planning and so on.

Mr. Ajani is a devout Muslim happily married to Mrs. Bosede Ajani his best half and mother of his lovely children.

AKINWUMI ISAAC TOPE



‘ Tope Akinwumi *fwapceh* (DPH, B.SC (H\E),MEM, M.SC, PhD in view) is a Public and Environmental Health expert, a registered Environmental Health Officer with Environmental Health Officers Registration Council of Nigeria (EHORECON) and currently the President of Environmental Health Officers Association of Nigeria ,Osun State Chapter.

Mr Akinwumi has served in various capacity as Head of Division , Health Education and community mobilization, where he made landmark in organising enlightenment programmes, training of the public in areas of food hygiene and safety , control of communication diseases, family health ,human relations, personal and Environmental Hygiene, sanitation and flood control, health promotion etc. He equally served as water supply officer in Egbedore L. G in Osun State where he made a tremendous achievements in the areas of borehole drilling and supervision ,rehabilitation of HPBH, MBH, Hand washing.

Mr Akinwumi is currently the Head of Department, Water and Environmental sanitation Olorunda L.G , Igbona- Osogbo, Osun State where he is in charge of supervision of water and waste management activities at the centre of Osogbo (Osun State capital) potable water supply and quality control, market sanitation, flood control activities, food hygiene, environmental impact assessment, pollution control, excreta and sewage management, sanitary inspection of premises, pest & vector control and other environmental health activities.

He is the leader/coordinator of a popular weekly radio programme on Osun State Broadcasting Cooperation Ile- Awiye Oke - Bale Osogbo, tagged **“Imototo Ayika Wa”** meaning Environmental Sanitation where the public is educated / enlightened on the components of Environmental Health to improved quality of life, survival, promote hygienic condition and welfare and sustainable environment .

Mr Akinwumi is a part- time lecturer at Environmental Health Officers Registration Council of Nigeria (EHOREON} training centre, Ilesa and chief examiner to the Council certification examination in Nigeria with a good track record.

Akinwumi has researched into physico-chemical quality of groundwater in the vicinity of municipal solid waste dump sites in Osogbo metropolis, Environmental impact assessment of Garri processing industry in Osogbo, Conduct water safety plan, Environmental approaches to flood control and management in twelve towns in Osun State .

Mr Akinwumi was inducted as fellow of West African Postgraduate College of Environmental Health in 2015 and Fellow of Nehemiah Fellows, Diocese of Osun Anglican communion. He is a member of several professional and social bodies where he has been decorated with awards and recognitions He has attended several conferences, training and workshops home and abroad on issues relating to water quality assurance, waste management, climate change, health education, pollution control dispute management e.t.c and presented many technical papers in various conferences, meetings and workshops. He is happily married and blessed with children .



Oluropo F. DAIRO BSc, MSc Electronic and Electrical Engineering
Current research interest: PhD research in Communication Physics

Since October 2010, Mr Dairo joined the Department of Physical Sciences in Redeemer's University as an Assistant Lecturer. His research visits traversed the International Satellite Beacon symposium at Abdus Salam International Centre for Theoretical Physics (ICTP, Italy), Quantum, Atomic, Molecular and Plasma Physics (QuAMP) at Durham/Newcastle University, UK, courtesy of Institute of Physics (IOP), UK and Gaseous Electronic Conferences at North Carolina State University, USA courtesy of American Physical Society. Prior to the appointment he was with *Société Internationale de Télécommunications Aéronautiques* (SITA) where he started as an intern in 2002 and was welcomed back to top-flight service as a Field Service Engineer after his studies in the UK in 2009. While in the UK, he obtained PgD Communication Engineering and MSc Electronic Instrumentation Systems in 2006 and 2007, respectively from the University of Manchester. Among the opportunities enjoyed while in the UK are: communication support staff of the Alumni Relation and Development Unit of the University of Manchester (UK and North America campaign, 2006-2007), EDEXCEL Specialist Marker (Systems and Control, 2006-2008), NIST short course on Laser measurement (US Department of Commerce, Boulder, Colorado, 2007) and member of staff Creative Support Ltd (2007-2009). Mr Dairo is an -Alumnus of Obafemi Awolowo University with BSc (Hons) in Electronic and Electrical Engineering. He is an active member of Institute of Electrical and Electronic Engineers (IEEE), Optical Society of America (OSA), Society of Satellite Professionals International (SSPI), American Physical Society (APS), Institute of Physics (IOP) and Nigerian Union of Radio Science (NURS).

Specific research interests:

- Radio communication and environmental monitoring.
- Molecular effect of green house gases on radio communication
- Atmospheric transmission at microwaves frequency
- Nano-Photonics and sensing applications.

Professor Joshua Ojo



Joshua Ojo is a Professor of Health Physics and Environment at the Department of Physics and Engineering Physics, Obafemi Awolowo University, Ile-Ife, Nigeria. He obtained his PhD in Engineering Physics from the same University in 1995, and served as Head of Department between 2011-2015. Prof Ojo acquired broad research experience from top laboratories in several parts of the world including Britain, the United States, Czech Republic, Poland, and Italy. He has published about 50 articles in local and international peer-reviewed journals. Provoked by results he obtained during a series of research contracts carried out under the auspices of the International Atomic Energy Agency (IAEA),

Vienna between 2001 and 2014, Prof Ojo decided to form a non-governmental organization that would conduct research into environment-health issues of peculiar relevance to Nigeria, communicate the findings widely in the country, and advocate for possible mitigating actions at the appropriate levels The LivingScience Foundation was consequently registered with the Corporate Affairs Commission in October 2016. Prof Ojo's broad research interest is in assessment of risks associated with exposure to environmental hazards by various population subgroups. His works include both measurements and modeling of exposure to the hazards. He is particularly interested in toxic and essential elements, pesticides, tropospheric ozone, microwave radiation associated with GSM communication, and environmental radioactivity. He is happily married to Olusola and they are blessed with six children

INVITED SPEAKERS

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EPHRAIM OGBAINI-EMOVON

MBBS, MPH, PGD (Proj Mgt), FMCPath, CPF (England)

Dr. Ephraim Ogbaini-Emovon is the Director of the Institute of Lassa Fever Research and Control (ILFRC), Irrua Specialist Teaching Hospital (ISTH), Irrua, Edo State, Nigeria. He is a Medical Microbiologist, Epidemiologist and Infection Preventionist.

He was formerly (2011-2015), the Consultant and Head of Diagnostics and Research Laboratory in the institute. He was instrumental to the establishment of the bio safety level 3 (BSL-3) facility in the institute and also facilitated the deployment of a Mobile Laboratory facility to Enugu and Port-Harcourt (Nigeria) and Sierra Leone, during the 2014-16 Ebola outbreak, under the auspices of the European Union.

Dr Ephraim Ogbaini-Emovon is a recipient of the prestigious Commonwealth Professional Fellowship Award. This afforded him further training and work under the Public Health England (2013-2014), in some of the reputable national and international reference laboratories in the United Kingdom, including; Rare and Imported Pathogen Laboratory, Porton Down, England. National Microbiology Reference Laboratory, Colindale, and Southampton University Hospital, England.

Dr Ephraim Ogbaini-Emovon is a WHO/GOARN trained expert on Emergency and Outbreak Response. He was part of the international response team deployed to Liberia, during the Ebola outbreak. He served as a Consultant on Infection Prevention and Control and also as a Field Coordinator in charge of disease surveillance and outbreak investigation. He contributed to the development of guidelines and tools for IPC assessment and emergency preparedness and response plan in collaboration with the Liberian Ministry of Health and Social Welfare.

Dr Ephraim Ogbaini-Emovon was recently appointed as a member of the WHO Expert Working Group on Development of Target Product Profile (TPPs) for Lassa Fever Diagnostics.

Currently, as the head of the Institute of Lassa Fever Research and Control (A National Reference Laboratory and Centre of Excellence for the Management and Control of Lassa Fever in Nigeria) he coordinate large scale collaborative research between the Irrua Specialist Teaching Hospital and the Bernard Nocht Institute of Tropical Medicine, and the Harvard Group.

He is well published Locally and Internationally.

ALH. GANIYU OLADIMEJI OYELADUN



Alhaji Ganiyu Olasimeji OYELADUN was born in Ikire in the present Irewole Local Government of Osun State on December 12, 1954. **He** attended Baptist Day School, Baptist Modern School and Ayedaade Grammar School, all in Ikire between 1961 and 1975. **He** attended Divisional Teacher Training College, Ijebu-jesa in 1977and Graduated as a qualified Grade II Teacher.

He began his career as a Public Health Superintendents in training at the School of Health Technology Ilesa 1978 and graduated in 1981. **He** was posted to the then Osun zonal Health Education unit Osogbo to work along with his highly referred boss Mr. Francis Afolabi Madamidola now retired.

He was a part time lecturer in the then School of Nursing Osogbo on Health Education, patient Counselling and Community Health. **He** was at various time a technical partner on Primary Health care services to Ila, Odo otin, Surulere, Orire, Ogo- Oluwa etc. LGA in the then Oyo State.

He was among the first Set of Officers that established the Department of Planning Research & Statistics Ministry of Health Osun State at Creation. He was later deployed to the then Osun State Environmental Protection Agency to create and developed the then Environmental Management and Sanitation Department. He was appointed as the pioneer General Manager Osun Waste Management Agency (**OWMA) in 2011.** Today to the glory of God he is a Senior Special Assistant to the Governor of Osun and also doubles as the General Manager Osun Waste Management Agency (**OWMA).**

Dr. (Mrs.) Modupe Taiwo Odubela.



Dr. (Mrs.) Taiwo Modupe Odubela, an erudite environmentalist with almost 35years of experience was until September 2013, the Director of Environmental Assessment Department, Federal Ministry of Environment. A General Administrator, an Environmental Manager, Waste Management Expert, Pollution and Developmental Control Personnel.

Obtaining B.Sc (Special Honours in Botany) from the University of Lagos in the year 1975, she continued to toll the path of success as she obtained a Ph.d in Environmental Biology in 1980 from the same university. As a studious scholar she obtained a chain of certificates majoring in several other disciplines to include; International Environmental Law, Arbitration and Alternative Dispute Resolution, Pollution Abatement Technology, Waste and Water Quality studies from the United State, Project Management and Business Financing among a host of others.

As an illustrious team leader she had served in many capacities within and outside the shores of Nigeria, lifting tall the flag of Nigeria in the following; West and Central Africa Aviation Safety & Security, Nigeria Cameroun Joint Commission, Lake Chad Environmental Committee e.t.c. Possessing almost 35 years of professional experience in Environmental Management involving Policy Formulation, Inspectorate and Compliance, Enforcement of Environmental Regulations in Oil and Gas Industrial, Minerals, Power, Agriculture, Water, Transportation, Privatization and Chemical Sectors at the Federal Government Level. She was also an adviser to the world bank on Privatization and Environmental related issues.

Dr. (Mrs.) Modupe Taiwo Odubela is known for firm decisions and ability to support her stands with scientific and undisputable facts and figure. She is diligent, Firm and a woman of reputable character, this has been attested to has she has won the integrity in Civil Service awards among a host of other awards both within and outside the shores of Nigeria.

BIOGRAPHY



Dr. Kingsley Kolapo Akinroye is the Executive Director, Nigerian Heart Foundation, Past Vice – President World Heart Federation, Past President, African Heart Network, Past President, African

Epidemiological Association and Member Executive Board, Choices International Foundation. He is a member of the Non-Communicable Disease Committee at the Nigerian Federal Ministry of Health. He served as Temporary Advisor World Health Organization on Non-Communicable Disease. In September 2011, he spoke from the floor of the United Nations in New York, during the High Level Meeting on Non-Communicable Diseases and called for National advocacy in Africa for policies that promote CVD prevention and control especially the implementation of the Framework Convention on Tobacco Control. He was the Project Team Leader, Nigerian Tobacco Situational Analysis, (a partnership with IDRC on Tobacco Control in Africa, and American Cancer Society on Tobacco Control). He is a Member of Board of Trustees, NCD Alliance Nigeria and currently a Member Board of Trustees Nigeria Tobacco control Alliance. He is a member of the Technical Report Committee of the 2013, 2016 and 2018 Nigerian Report Card on Physical Activity for Children and Youths.

He has more than 25 years' experience in Non-Governmental Organisations (NGO's) management and leadership positions. He has been actively involved with the creation and development of National, Regional and International NGO's specifically Nigerian Heart Foundation, NCD Alliance Nigeria, African Heart Network and African Epidemiological Association.

Over the last 20 years, he has actively participated in promoting the relationship of Nigerian Heart Foundation with the Federal Government of Nigeria, State Governments, World Health Organisation, World Heart Federation, African Union and other International NGO's. He has led a network of NGO's and CSO's involved in Policy advocacy processes with government in Tobacco control, Heart-Health nutrition, Food-labelling, Physical activity and Non-Communicable Diseases Policy.

He has had exposure to the processes of partnering with donors and stakeholders in Tobacco at Regional and International levels such as WHO - AFRO, WHO, Geneva; International Development Research Centre, Canada; Campaign for Tobacco - Free Kids; West African Health Community; Active Health Kids, Canada; and Passion for Healthy Kids, Nigeria.

As the Honorary Consul, Honorary Consulate of Finland, Nigeria, he has had the opportunity to build relationship with high government leaders, Ambassadors from other Countries in Nigeria, NGO's and CSO's, Research Institutes and Universities. He represented Nigeria Heart Foundation, African Heart Network and World Heart Federations at International and advocacy meetings in USA, UK, Canada, Australia, India, China, Kenya, Ethiopia, Iran, Mozambique, Cameroon, Ghana, Egypt, Rwanda and Congo (Brazzaville).

His other areas of expertise include Organisation leadership/ Representation, Strategic Planning, Fundraising, Proposals, Public presentations, Government relations, Policy Advocacy Programs and Policy Development.

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PROF M.K.C. SRIDHAR

RECIPIENT, AF OLUWOLE PRIZE FOR ENVIRONMENT-HEALTH, 2018



Professor Mynepalli Kameswara Chandra Sridhar was born in Vellatur (Andhra Pradesh, India). He obtained an M.Sc (1964) in Biochemistry from the Maharaja Sayajirao University, Baroda and PhD degree (1971) from the Indian Institute of Science, Bangalore. He moved to the University of Ibadan, Ibadan, Nigeria, in October 1977 and became professor of Environmental Health in 1986. Prof Sridhar occupied several positions in the College of Medicine including: Head of Environmental Health Unit, Director of Ibarapa Primary Healthcare Programme, First Head of Epidemiology, Medical Statistics and Environmental Health, and others. He initiated the MPH (Environmental Health)

programme in 1993 and has trained over 200 students at the postgraduate level. He developed “Waste to Wealth” initiatives, notable among them are organic fertilizer from waste, biogas, and renewable resources recovery and utilization. He has been a Consultant for the Federal Ministry of Health, Federal and State Ministries of Environment, UNICEF, UNDP World Bank (ALCO-Abidjan-Lagos Corridors Project), some NGOs and industries. He has several patents and over 250 publications in books and international journals and is a Member/Fellow of professional bodies and societies in Environmental Health Scientists.

WINNING ESSAY

UNDERGRADUATE ESSAY COMPETITION

NAME: OBIDARE OLOLADE ANTHONIA
INSTITUTION: NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY: HEALTH SCIENCEs
DEPARTMENT: PUBLIC HEALTH

ONE HEALTH: A MULTISECTORAL APPROACH TO SUSTAINABLE DEVELOPMENT.

What is One Health?

From a strict biological point of view, humans are just one species among other species albeit one with very special capacities, characteristics and skills. Among scientists, it is generally acknowledged that we share many features with other species which are certainly relevant when the concepts of health and diseases are discussed. The term "One Health" is used in many different contexts and by people with varying backgrounds; however there appears to be some confusion as to what the term really means and it is used in a wide range of contexts often including or bordering concepts such as infection biology, contagious diseases, zoonotic infections, evolutionary medicine etc.

One Health is the integrative effort of multiple disciplines working locally, nationally, and globally to attain optimal health for people, animals, and the environment. Because of their expertise, veterinarians play critical role in the health of animals, humans and even the environment, but their roles are often overlooked or unrecognized. Nonetheless, veterinary medicine is the only profession that operates at the interface of these three components of One Health i.e. human health, animal health and environmental health.

One Health is a modern global movement to promote collaborative efforts between different health related professionals, including medical doctors, veterinarians and many other scientific, health, environmental and other related disciplines. Although there is not an agreed One Health definition, a useful one is; "the collaborative effort of multiple disciplines working locally, nationally, and globally to attain optimal health for people, animals and our environment". Although government and powerful international institutions are actively involved, it is not an imperative movement, ordering people to respond. Instead it works mainly through collaboration and agreed goals of the players: this is now termed 'soft government'.

The driving intellectual force for this ideology can be found in the following opening and closing statements made at that meeting of World Commission on Environment and Development in Manhattan: "Recent outbreaks of West Nile Virus (WNV), Ebola Hemorrhagic Fever, Severe Acute Respiratory Syndrome (SARS) , Monkey pox, Mad Cow Disease and Avian Influenza remind us that human and animal health is intimately connected. A broader understanding of health and disease demands a unity of approach achievable only through a consilience of human, domestic animal and wildlife health - One Health.

Phenomena such as species loss, habitat degradation, pollution, invasive alien species, and global climate change are fundamentally altering life on our planet from terrestrial wilderness and ocean depths to the most densely populated cities. The rise of emerging and resurging infectious diseases threatens not only humans (and their food supplies and economies), but also the fauna and flora comprising the critically needed biodiversity that supports the living infrastructure of our world. The earnestness and effectiveness of

humankind‘s environmental stewardship and our future health have never been more clearly linked.

Emerging and Re-Emerging Diseases

Infectious diseases have for centuries ranked with wars and famine as major challenges to human progress and survival. They remain among the leading causes of death and disability worldwide. Against a constant background of established infections, epidemics of new and old infectious diseases periodically emerge, greatly magnifying the global burden of infections. Studies of these emerging infections reveal the evolutionary properties of pathogenic micro-organisms, their host and the environment and the extraordinary progress in the knowledge of infectious diseases. The discovery of antibiotics and effective vaccine are among the great achievements of the nineteenth and twentieth centuries. These achievements have led to a dramatic reduction in the levels of mortality from these diseases. However, some factors may suggest that new infective agents may develop and become aggressive and those diseases that had been practically conquered, may re-emerge in the future, such factors include: antibiotic resistance, national and international migration, population increase and ageing and increase in the number of immune-suppressed patients.

Antibiotics Use In Animal and Human Health

Antibiotics are medicines used to control infectious diseases in humans and animals. They are derived originally from natural substances produced as defense systems by micro-organisms. These micro-organisms have been identified and cultured naturally or synthetically to create the drugs we know today in human and veterinary medicine. The vast majority of antibiotics are used to kill or inhibit the growth of bacteria; they are not effective against viral infections. Antibiotics are now widely available and their use has brought significant benefits in terms of fighting once common-place infections. However, every time a dose of antibiotics is given, it can provide any bacteria present an opportunity to develop resistance to the drug. The over-use of antibiotics (especially in low doses or incomplete courses) is the main reason for the increase in antibiotic resistance. This resistance has serious implications. It means that antibiotic can be ineffective when they are most needed to treat serious disease.

Over use of antibiotics in human medicine is partly responsible for the increase in antibiotic resistant bacteria. However, for a range of bacteria, farm animal use contributes significantly, and for some infections is the main source of resistance. The therapeutic use of antibiotics in farm and domestic animals prevent suffering and death. As such, the value of antibiotic use to treat diseases in animals cannot be overemphasized.

However, problems arise with routine prophylactic use of antibiotics to prevent disease and the use of antibiotics to promote animal growth. The concerns relate not only to human health but also to farm animals. The prophylactic use of antibiotic in intensive farming systems has been associated with animals living in crowded condition, having their immune systems compromised and susceptible to rapid spread of diseases. The use of antibiotics as growth promoters in animals pushes them towards their physiological and metabolic limit with negative impacts on welfare. Where animals are kept in crowded intensive conditions, resistant strains of bacteria can spread rapidly. The recognition of antibiotic resistance as a serious risk to human health requires concerted actions from the media and the legislature in order to arrest the growing threat to both human and animal health and the attendant threat to sustainable development especially in many developing countries like Nigeria where animals are being reared in residential area thus encouraging cross transmission of infectious diseases.

Population Growth and Sustainable Development

At the beginning of 21st century, around the world we see signs of severe stress on our interdependent economic, environmental and social systems. Excessive consumption and poverty continue to put enormous pressure on the environment in many areas. The state of the environment is much more fragile and degraded than it was a few decades ago. Despite notable improvements in areas such as river and air quality in places like Europe and North America, generally there has been a steady decline in the environment, especially across large parts of the developing world (UNEP, 2002). Eighty countries, amounting to 40% of the world population were suffering from serious water shortages by the mid-1990s. Around the world people still lack access to safe drinking water and 2.4 billion to improved sanitation, this and a host of other trends suggest that our current developmental course is unsustainable. The high and increasing consumption of scarce resources and resulting pollution compounded by population growth, and the growing imbalance in development between different countries pose unacceptable risks to communities, nations and humanity as a whole. It has become clear that economic development that disregards environmental and social impacts can bring unintended and unwanted consequences as evidenced by the threat of climate change, overuse of fresh water resources, loss of diversity and rising inequalities.

The concept of sustainable development as we know it today emerged in the 1980's as a response to the destructive social and environmental effects of the prevailing approach to "economic growth". The idea originated within the environmental movement, one of the earliest formulations of the concept of sustainable development can be found in the 1980's World Conservation Strategy, jointly presented by the UN Environment Programme, the World life Fund and International Union For Conservation of Nature and Natural Resources (UNEP/WWF/IIUCNNR,1980). This early formulation emphasized that, for development to be sustainable, it must take account of social and ecological factors, as well as economic ones; of the living and non-living resource base and of the long term as well as the short-term advantages and disadvantages of alternative actions. It called for three priorities to be built into development policies; the maintenance of ecological processes, the sustainable use of resources and the maintenance of genetic diversity.

In order to reverse unsustainable trends, the World Commission on Environment and Development (WCED) recommended the following seven critical actions aimed at ensuring a good quality of life for people around the World (WCED,1987) :

- revive growth,
- change the quality of growth,
- meet essential needs and aspirations for jobs, food, energy, water and sanitation,
- ensure a sustainable level of population,
- conserve and enhance the resource base,
- reorient technology and manage risk and
- including and combining environment and economic considerations in decision making.

For a development to be sustainable, it requires the integration of economic, environmental and social objectives across sectors, territories and generations and hence the concept of multi-sectoral collaboration. Therefore in the achievement of "One Health" there must be integration of all sectors, veterinarians with specializations and experience in public health are in a unique position to strengthen and contribute to the expanding work within the ministries of health and agriculture, public and private institutions and industries with regard to preventing and controlling zoonotic diseases and other health-related risks that originate from animals, their products and their living environment. The veterinary public health professional must maintain surveillance on the many links that continue to evolve between animals, human and the environment. The ability to understand complex interactions, work in

multi-disciplinary teams, and fully embrace the one health approach will further make veterinary professionals a key player in global health and wellbeing. Also the centrality of human well-being to any interpretation of the One Health approach is undeniable. As human well-being cannot be isolated from societal well-being and environmental soundness, progression from human well-being to societal well-being will necessarily require a shared vision and culture that is more collaborative and accommodative of other sectors concerned with One Health.

Conclusion

In conclusion, to win the disease battles of the 21st Century while ensuring the biological integrity of the earth for future generations requires interdisciplinary and multi-sectoral approaches to disease prevention, surveillance, monitoring, control and mitigation and more broadly to environmental conservation. It is clear that no one discipline or sector of society has enough knowledge and resources to prevent the emergence or resurgence of diseases in today‘s globalized world. No one nation can reverse the patterns of habitat loss and extinction that continue to undermine the health of people and animals. Only by breaking down the barriers among agencies, individuals, specialties and sectors can we unleash the innovation and expertise needed to meet the many serious challenges to the health of people, domestic animals, and wildlife and to the integrity of ecosystems. Solving today’s threats and tomorrow‘s problems cannot be accomplished with yesterday’s approaches. We are in an era of One World, One Health and we must devise adaptive, forward-looking and multidisciplinary solutions to the challenges that undoubtedly lie ahead.

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ABSTRACTS

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INVITED: PLENARY SESSIONS

NON-COMMUNICABLE DISEASES & SUSTAINABLE DEVELOPMENT GOALS IN NIGERIA: OPPORTUNITIES AND PRIORITIES FOR ACTION

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Abstract: Non-Communicable Diseases (NCDs) are recognised as one of the major challenges for sustainable development in the 21st Century. Globally, the remarkable gains achieved in economic growth, health and living standards in the past Century is now being threatened by climate change, finance and food insecurities; and the rising crisis in NCDs, including heart disease, stroke, cancer, diabetes, chronic lung disease, sickle cell disease and mental health.

The underlying causes of NCDs are shared and modifiable risk factors. The increasing global crisis in NCDs; especially in developing countries (including Nigeria) is a barrier to Sustainable development goals including poverty reduction, health equity, economic stability and human security.

The UN High-Level Meeting (UN HLM) on NCDs in September, 2011 provided a unique opportunity to create a sustained global movement to tackle NCDs and concluded that dealing with NCDs was central to the long-term global development agenda. Political leadership at the highest level, with international coordination and consensus for priority actions and interventions are crucial responses to the crisis in NCDs and to facilitate national action.

In September 2018, Government will review progress and make commitments to accelerate country action at the third UN High Level Meeting on NCDs in New York. The first UN HLM did not include MDGs, however the third UN HLM, with inclusion of the context of the Sustainable Development Goals (SDGs) now provides a stronger mandate for high-level political action to implement cost-effective interventions and solutions for NCD Prevention and Control. The 2018 HLM will also provide a strategic opportunity for countries to showcase their successes and provides a platform for demonstrating leadership towards launching simple and workable initiatives.

This presentation will cover the main NCDs in Nigeria, what has been achieved in Nigeria since the UN HLM 2011, and future opportunities for Nigeria to align with global agenda.

It will highlight the unprecedented opportunities to create a sustained national movement against premature death and preventable morbidity and disability from NCD, mainly heart disease, stroke, cancer, diabetes, sickle cell disease and chronic lung diseases.

ENVIRONMENTAL SANITATION AND SUSTAINABLE DEVELOPMENT

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ABSTRACT: Inadequate environmental sanitation has been recognized as a public health hazard worldwide. Waste accumulation in the cities of developing countries has become common sights in recent times. In most Nigerian cities, living with waste as part of the natural environment has become a way of life. Effective sanitation and management of solid waste has been one of the challenges facing urban areas in the world owing to an aggregation of human settlements and rapid urbanization as well as unprecedented population growth and increased consumption thereof that has the potential to produce a large amount of solid waste. The situation is further compounded with failure of governments in setting up an effective waste collection system. This paper reviewed the relationship between Environmental Sanitation and Sustainable development and proposes a conceptual knowledge management approach for tackling municipal waste problems in cities across Nigeria. The application of knowledge management approach and strategy is crucial for inculcating a change of attitude in members of the public towards improving the management of waste. This paper proffers solutions promoting efficient municipal waste management, including producers' involvement in waste management as well as provisions of adequate government policies. Serious consideration should also be given to the possibility of re-use and recycle of wastes that litter around the street.

SYNERGY BETWEEN EIA ACT AND PHYSICAL PLANNING LAWS: A MUST FOR SUSTAINABLE DEVELOPMENT IN NIGERIA

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Retired Director of Environmental Assessment Department, Federal Ministry of Environment

Abstract: This paper discussed the synergy between EIA act and physical planning law; a must for sustainable development in Nigeria. It was noted that the objectives of both laws and benefits of their synergy are aimed towards sustainable development, although there are some grey areas in the Physical planning law that can lead to the conflict in the enforcement of EIA operations. The paper identified challenges, and gave recommendations on how to resolve it. It is therefore concluded that synergy between the two regulatory bodies will encourage sustainable development in Nigeria**.**

Antibiotic use in Animal and Human Health: Volumes and Implications

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Abstract: Discovery of antibiotics at the beginning of the 20th century was one of the major breakthroughs for health care delivery. It has enabled not only the effective treatment of common infections but also allowed medical interventions including transplantations, cancer care and chemotherapy. Early discoveries were followed in the 50s to early 70s with the golden age of antibiotics when practically all antibiotics in current use were discovered and deployed into use. Antibiotics became widely used both in human and animal health, leading to the false optimism that infectious diseases have been conquered. But then came the revenge of the microbes! Microorganisms as agents of different infectious diseases through various genetic and biochemical mechanisms now are resistant to killing by antibiotics. We are near full circle to the pre-antibiotic era of untreatable infections. Antimicrobial resistance currently is one of the greatest global threats to health as well as attainment of United Nations' sustainable development goals. The greatest driver of resistance is increased and inappropriate use of antibiotics in humans and use for growth promotion and disease prevention in animals. Thus, there is urgent need to responsibly use and conserve currently available ones while concerted efforts are made to get the antibiotic pipelines active and running again.

EMERGING AND RE-EMERGING DISEASES AND THE CHALLENGE OF SUSTAINABLE DEVELOPMENT

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Abstract: Infectious diseases are leading cause of death world over, especially in developing countries were it pose a great challenge to human productivity and national development. According to WHO, at least one new infectious disease has emerged each year since 1980, many of which evade traditional therapies and have no vaccine or cure.

There are far more virulent, very difficult-to-treat infectious diseases today than there were 30 years ago. At the same time, old infectious diseases once believed to be controlled, such as tuberculosis, staphylococcus, cholera, malaria, hepatitis, influenza etc, are *reemerging* as deadly new, often drug-resistant strains are springing up in new regions of the world.

This presentation attempts to examines the spectrum and burden of emerging and re-emerging infectious diseases, especially at regional level (West Africa); the factors propagating their emergence and spread; their social, economic and political impact on sustainable development and offers strategies to mitigating or averting this recurrent public health menace using multi-sectoral approach - ONE HEALTH.

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CONTRIBUTED ABSTRACTS: PARALLEL SESSIONS

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PHYSICAL

Title : Model Evaluation by Comparison of Model-Based Predictions and Measured Values of Lead in Blood and Milk of Women in Polluted Environment

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Abstract : This paper presents a comparison between the simulated and experimental blood and milk lead levels of women living in polluted environment. To obtain the experimental values, blood and milk samples collected from 27 lactating mothers from Zamfara gold mines (high exposure) and 50 mothers from Ile-Ife (low exposure) were analyzed using Inductively Coupled Plasma Mass Spectroscopy (ICP-MS). To obtain the predicted values, a Physiologically-Based Kinetic (PBK) model was developed by extending models by Rabinowitz and Bert to include transfer from blood and from other tissues to milk and subsequently to infant. Based on the developed model, several differential equations representing exchanges between blood and each of the tissues were generated and solved using Maple programming environment. Accuracy check of the model was done by running blood data used by Rabinowitz on it and comparing the outputs. Model was validated for both the high and low exposure scenarios. With appropriate values for individual body height and body weight, the Chi square results showed that there is a fairly good correlation between the predicted and measured blood lead concentrations for both the highly exposed subjects ($\chi 2$=0.0056, r=0.557 at 0.01 significance level) and subjects with low exposure ($\chi 2$=0.0086, r=0.7851 at 0.01 significance level). There is however a bad fit between the predicted and measured milk lead levels especially in subjects with reduced lead exposure ($\chi 2$= 4.87E-07, r=0.4379 at 0.01 significant level) which may be as a result of milk sample loss in transit which was unavoidably experienced. From the results, it can be concluded that a model may be a useful tool in validating experimental observations if adequate precautions are taken in the process of sample collection and analysis. Keywords: Model, Blood, Milk, Predicted values, Measured Values.

Title : Thermoluminescence kinetic parameters of LiF:Mg,P

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Abstract : Thermoluminescence kinetic analysis using T_m-T_stop peak shape and glow curve deconvolution methods have been carried out on the glow curves of LiF:Mg,P. Thermoluminescence (TL) study was carried out after exposing to beta-irradiation in the dose rate of 0.04mGy per revolution. The TL glow curves of LiF:Mg,P exhibit two apparent peaks at around 120℃ and 239℃ at heating rate of 2Ks^(-1). The intensity of the glow peak increase with peak temperature shifting toward the higher temperature as the heating rate increases. The position of each of the peaks is

independent of dose, a feature of first order behavior. However, detailed kinetic analyses showed that in fact, the peaks are not subject to first order kinetics. The T_m-T_stop method is applied to investigate the number of peaks and their positions and to obtain the trap distributions in the samples. The glow curve can be considered as a superposition of at least five overlapping peaks. These peaks show up at 120, 238, 260, 280 and 300℃. The values of these parameters calculated with these two methods are not comparable. The b values obtained ranged from 1.90 to 2.12 for peak I and from 1.98 to 2.25 for peak II. The E values range from 1.06 to 1.19 eV for peak I and from 1.83 to 2.30 eV for peak II. The E values increases as the heating rate increase for peak shape methods.

Title: MATHEMATICAL FRAMEWORK FOR THE DEVELOPMENT OF A COMPTON SCATTERING TOMOGRAPHIC SYSTEM

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Abstract: The potential advantages in the use of Compton scattering in imaging applications prompted interest in this work. The main attraction of Compton scatter imaging, CSI, lies in its ability to image directly the electron density distribution of materials using transmitted photons rather than the attenuation coefficients as in the case of computed tomography, CT. Also the CSI technique offers flexibility in the positioning of the detector, which do not have to be on opposite sides of the source as is required in CT technique. In this work, a method for tomographic imaging of electron density by recording the number of scattered photons as a function of energy and detector position is presented. The image of the electron density is reconstructed from measurement of its line integrals over many overlapping circular paths. The image reconstruction formula was developed using an approximate solution that took the attenuation of pre- and post-scattered radiation into consideration.

Keywords: *Compton Scattering Tomography, CST; Image Reconstruction; Electron Density; Attenuation; Line Integrals*

Title : RADIOLOGICAL IMPACT OF LOCALLY PRODUCED LAUNDRY SOAPS AND DETERGENT POWDERS ON USERS IN NIGERIA

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Abstract : This study evaluated the natural radioactivity levels in different local laundry soaps and detergent products used in Nigeria. The specific activities of 40K, 238U, and 232Th were determined using gamma spectroscopy. Calculations of radiological parameters were also made to estimate associated radiation hazards. The activity concentrations of soap samples ranged from 81.1 ± 14.92 - 391.03 ± 20.42, 2.13 ± 5.74 - 54.38 ± 6.99, and 13.76 ± 9.15 - 70.09 ± 12.25 Bq/kg for 40K, 238U, and 232Th respectively, with mean activity concentrations of 221.75 ± 20.21, 25.47 ± 3.72, and 35.41 ± 3.30 Bq/kg for 40K, 238U, and 232Th respectively. The activity concentrations of detergent powders ranged from 73.71 ± 13.44 - 378.98 ± 29.83, 4.30 ± 3.77 - 45.34 ± 5.34, and 8.29 ± 5.87 - 41.70 ± 8.51 Bq/kg for 40K, 238U, and 232Th respectively, with mean activity concentrations of 233.07 ± 16.77, 20.53 ± 2.59 and 27.18 ± 1.87 Bq/kg for 40K, 238U, and 232Th respectively. The radium equivalent activities for the bar soaps sampled ranged from (58.52 ± 10.31 - 136.55 ± 13.58) Bq/kg with a mean of 93.18 ± 6.72 Bq/kg while for the detergent products, the radium equivalent activities ranged from

(48.44 ± 6.66 - 108.94 ± 9.56) Bq/kg with a mean of 77.35 ± 4.47 Bq/kg. The mean external hazard index for bar soaps was 0.25, and 0.21 for detergents. The mean internal hazard index was 0.32 for bar soaps, while for detergents it was found to be 0.26. The mean activity concentrations were below the world average terrestrial values of (32, 45 and 412) Bq/kg for 238U, 232Th and 40K, respectively (UNSCEAR, 2008), and the radium equivalent activities, external and internal hazard indices were found to be below the safe limits as recommended by (OECD, 1979), and (ICRP, 2000). It suffices to say therefore, that the locally produced laundry soaps and detergent products used in Nigeria are safe, and may not present any significant radiological health risks to users. Keywords: Laundry soaps, detergent powder, activity concentration, natural radionuclides, radiological hazard indices

Title : Radioactivity in Cosmetic Powder

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Abstract : Talc powders are commonly used for facial makeup and to prevent rashes. There have been strong indications of connection between talc and some cancers. Most studies have tried to find the chemical compounds that could cause these cancers. However, since talc is a mined material, there are strong reasons to examine the concentrations of naturally occurring radionuclides in some of these powders. This study examines the activity concentration of radionuclide in thirty powder samples that are commonly sold in Nigerian markets, using sodium iodide detector (NaI) well type.The activity concentrations of 238U, 232Th and 40K in cosmetics powders samples ranged from 18.07±4.04-130.10±5.84 Bq/kg, 15.88±1.58-65.85±4.97 Bq/kg and 719.65±42.45-1938.73±116.85 Bq/kg, respectively. Some of the results obtained for the corresponding radionuclides are higher than the worldwide average values of 33, 45, and 412 Bq/kg for 238U 232Th and 40K respectively. The absorbed dose and the annual effective dose rates observed range from 14.59-43.15 nGy/h and 0.09-0.26mSv, respectively.

Title : RADIOLOGICAL IMPACT OF SOME QUARRY SITES ON AGRICULTURAL FARM SOILS IN IBADAN

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Abstract : Farm soils around some quarry sites in Ibadan were collected and analyzed by gamma spectrometry in order to determine the activity concentrations of 40K, 238U and 232Th. The mean activity concentrations of 40K, 238U and 232Th in the farm soils around the quarry sites ranged between 171.3 ± 14.9 and 470.6 ±24.6 Bq/ kg, 9.3± 1.6 and 19.1± 1.2Bq /kg and 46.6±2.8.4 and 82.5± 2.1 Bq/ kg respectively for 40K, 238U and 232Th. The average effective dose ranged between 0.02 to 0.04 mSv/y., the radium equivalent; 38.0 and 42.9 Bq/kg, the external index; 0.1 and 0.5, the internal index; 0.2 and 0.6 and the gamma activity;0.2 and 0.7. The average annual effective dose obtained was 0.04mSv/y and was lower than the recommended annual effective dose equivalent limit of 0.07mSv/y. The radium equivalent activity was also less than the world average limit of 370 Bq/kg. Hazard indices which were used to determine the suitability of the soil samples in terms of radiological effects for farming and construction purposes showed that the soil samples do not pose any significant radiological hazards to the farmers and residents. Keywords: Quarry sites, effective dose, farm soil, natural radionuclides, radiological hazard indices

Title : CONSUMPTION OF FOOD CROPS FROM FARMLANDS AROUND SOME QUARRY SITES AND ITS RADIOLOGICAL HEALTH IMPLICATIONS TO THE LOCAL POPULATION IN IBADAN

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Abstract : Some commonly consumed food crops were collected from farmlands around five functional quarry sites in Ibadan in order to determine the concentration of 40K, 226Ra and 228Th. The samples were air-dried to constant mass, pulverized, sieved to pass 2mm mesh-size and sealed for 4 weeks to attain secular equilibrium. The activity concentration of the radionuclides were determined by counting each sample for 10 hours using a gamma-ray spectrometry system consisting of a lead-shielded 76mm × 76mm NaI(Tl) detector coupled to a multichannel analyzer. The effective dose rates due to ingestion of the food crops were evaluated using the calculated activity concentrations and food consumption rates. The activity concentration of the natural radionuclide in the food crops varied from 3.2±1.9〖 Bqkg〗^(-1) and 50.6±3.3〖 Bqkg〗^(-1) for 40K, 0.3±0.1〖 Bqkg〗^(-1) to 5.7±1.2〖 Bqkg〗^(-1) for 226Ra and from 2.7±0.2〖 Bqkg〗^(-1) to 23.8±1.6〖 Bqkg〗^(-1)for 228Th. The average annual committed effective dose (AACED) of the natural radionuclides due to ingestion was calculated to be 0.17〖 mSvyr〗^(-1) which is below the limit of 0.30〖 mSvyr〗^(-1)(UNSCEAR, 2000). This suffices to say that no significant radiological health effects are expected to the local population around the mining sites.
Keywords: Quarry sites, ingestion effective dose, farmlands, natural radionuclides , food crops

Title : Determination of Gamma-emitting Radionuclides in some Selected Vegetables from High and Low Cancer Prevalence Areas in Ondo, Southwest Nigeria

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Abstract : There have been some concerns about the possible health risks associated with exposure to natural radioactivity in Ondo city. Preliminary data available at the Ife-Ijesa Cancer Registry located at the Obafemi Awolowo University Teaching Hospital Complex (OAUTHC) together with population census figures suggest that cancer prevalence in the western part of the city of Ondo is about three times the prevalence in the eastern part. This has been reported to be correlated with levels of radioactivity in soils and water from the two sections of the city. In this work, the natural radioactivity contents in some selected vegetables from high and low cancer prevalence areas in the were analyzed to check if the patterns in water and soil are confirmed and consequently further clarify the exposure pathway of radioactivity into man. Vegetable (and some fruit) samples were collected from the two geographical areas. Analysis of samples for radioactivity was carried out by gamma ray spectrometry in our laboratory with a CsI(Tl) scintillator detector coupled to a Universal Radiation Spectrum Analyzer (USRA). The radioisotopes identified in the samples include those of the series headed by 238U and 232Th as well as the singly occurring isotope 40K. The differences in radioactivity levels reported in soil and water samples were not reflected in the vegetable samples as there were no statistically-significant differences in the radioactivity levels in similar vegetables collected from the two different sections of Ondo town. There were however significant differences in radioactivity levels in different types of vegetables, irrespective of where in Ondo city they were collected from. Tete (Amarathus Hybridus) has the highest amount of natural occurring radioactivity

(214Pb, 224Ra and 40K) among the vegetables. The activity concentrations of 214Pb, 224Ra and 40K in the vegetables vary from 27.50±2.21 to 37.50±2.17Bq/kg; 3.40±0.52 to 4.33±0.72Bq/kg and 81.55±2.03 to 93.33±2.15Bq/kg respectively. The mean absorbed dose rate, annual effective dose equivalent and the collective effective dose equivalent were determined from the measured activity concentration of the radionuclide respectively.
KEYWORDS: Gamma emitting Radioactivity, Vegetables, Cancer Prevalences, Cancer registry, Ondo town.

Title : A COMPARATIVE STUDY OF GROUND LEVEL OZONE POLLUTION IN LAGOS AND SOKOTO, NIGERIA USING SATELLITE-DERIVED DATA.

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Abstract: The primary pollutants originating from car exhausts and industries (i.e. Volatile Organic Compounds and Oxides of Nitrogen) are known to have detrimental effects on human health when they combine in the presence of sunlight to form Tropospheric or Ground level ozone. Elevated Ozone is extremely destructive because it is less soluble than other air pollutants and can penetrate into the lungs to aggravate pre-existing respiratory ailments such as asthma. In this study, Satellite-derived data was used to observe the distribution pattern of Ground level Ozone in two selected locations: Lagos and Sokoto, Nigeria. The study compared Ozone levels between the two locations for the period of 26 years (1979-2005). The data for the study was obtained from the Monthly Tropospheric Ozone Residual Climatology (TOR) available at MY NASA DATA Live Access Server (Advanced Edition). The Results of the study revealed that Lagos had the highest values of tropospheric Ozone recorded throughout the years from January to December. For both locations, highest values of Tropospheric Ozone was observed in August. Furthermore, higher values were also observed in March at the peak of the Dry Season. The Results of this study suggest that Satellite-derived data is viable for monitoring Ground level Ozone concentrations. This is especially important in developing countries where Ground equipment are not readily available for such measurements.
Key Words: Ozone, Pollution, Satellite derived data, Nigeria, Industrialization.

Title: Determination of CO, NO_2 and PM Pollutant Concentrations from Vehicular Emission along a Major Highway in Lagos Metropolis

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The main objective of this study is to determine CO, NO_2 and PM concentrations from vehicular emission along a Major Highway in Lagos Metropolis using both direct and indirect techniques. Five sampling sites were established along the study route, viz: Gbagada, Oshodi, Iyana-Isolo, Cele, and Apapa/ Berger Car Depot. Traffic count, meteorology and total ambient measurement were carried out simultaneously along the study route. The vehicle emission measurement was carried out using Infra-Red Industries 5-GAS analyser model and handheld aerosol real time particulate sampler. Ambient Particulate matter concentration was measured using Air metric particulate sampler while ambient gaseous concentrations were measured using Aeroqual gas analyser with non-dispersive IR photometry and chemiluminescence for CO and NO_2 respectively. BREEZE ROAD model was used to predict the ambient concentration from the vehicular emission. Results were compared with measured actual ambient pollutant concentrations. The average concentrations for the predicted $PM_{2.5}$ were 112 $\mu g/m^3$ for dry season and 76.4 $\mu g/m^3$ for wet season along the study route. On the other hand, total $PM_{2.5}$ concentrations measured during dry and wet seasons range are 208.49

μg/m^3 and 167.05 μg/m^3 respectively. Predicted average concentration for NO_2 was 52.68 μg/m^3 for dry season scenario while wet season average value was 37.63 μg/m^3 compared to total measured ambient air NO_2 concentrations of 67.10 μg/m^3 and 50.16 μg/m^3 for dry and wet seasons respectively. For CO, the predicted average concentrations were 2,141.3 μg/m^3 for wet season and 2,834.3 μg/m^3 for dry season compared to total measured ambient air concentrations of 6,489.47 μg/m^3 and 10,115.88 μg/m^3 for wet and dry seasons respectively. As expected, the actual ambient PM, CO and NO_2 values were higher than predicted vehicular values throughout the sampling stations due to other source contributions. Also, higher values were recorded for all selected pollutants during dry season than wet season due to lower precipitation and greater wind speed. However, all pollutant concentrations were below FMEnv and W.H.O. limit except PM at some locations. In general, seasonal average contributions based on average hourly percentile analyses from vehicular emission contribution of each pollutant to the airshed along study route in Lagos Metropolis are as follows: $PM_{2.5}$ (Dry-34.9 %; Wet-32.9 %), CO (Dry-21.8 %; Wet-25 %) and NO_2 (Dry-43.2 %; Wet-42 %). The percentage of vehicular emission contributions for particulate matter component are similar to those of previous studies using receptor modelling for the study area..

Enviromental Impact of Burnt Municipal Solid Wastes on Vegetation in Ekiti State, Nigeria.

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Abstract: The vegetation at solid waste dumpsites has been a serious concern to food safety, health and environmental specialists. It is a known fact that heavy metals have their nutritional benefits on humans but excess intake can cause havoc to the immune system. Using Flame Atomic Absorption Spectrometry (FAAS), the concentration of four heavy metals (Mn, Cd, Pb and Ni) were determined in tomatoes and two vegetables (Talium triangulae and African spinach) from two dumpsites. The results indicated that the concentrations (mg/kg) of these four heavy metals were within the range 0.45-4.43, 0.00-0.27, 0.08-1.28 and 0.00-0.05 respectively in the sites considered. Using SPSSS 17, significant differences exist between these levels and control ($t<0.005$). Out of these heavy metals, only Mn in water leaf from site A was found above the WHO maximum permissible limit. The relatively higher levels (compared with control and WHO) of heavy metals observed in this study was an indication of contamination of these edible plant samples as a result of the burning of wastes at the dumpsite. Vegetables in these sites are therefore not good for human consumption.

Keywords: Environmental impact, burnt municipal solid waste, vegetation

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BIOCHEMICAL

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Title : Impacts of Effluents from a Beverage Bottling Company on Morpho-Physiological Characteristics of Vigna unguiculata [L.] Walp grown in a Controlled Environment

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Abstract : This study reports the investigation of the agro-potentiality of the effluents of a beverage bottling company (BBC), on cowpea (Vigna unguiculata). The effluents were applied at 0, 10, 20, 30, 40 and 50% concentrations separately in two different groups. Morphological and yield parameters were measured in ten replicates. Transverse sections of leaf, petiole and stem were also investigated by light microscopy. The effluents had a pH, electrical conductivity and total dissolved solids in the range of 7.4-7.5, 599.0 - 693.0 µS/cm and 395.0 - 455.0 mg/L, respectively. At high concentrations in the group amended with untreated effluents (A), the ANOVA result showed a significant increase in the number of leaves, shoot height, leaf length and number of pods per subgroup (p0.05); the mean girth size showed no difference (p>0.05). In the treated effluents amended group, the mean number of leaves were found to increase significantly at higher concentrations (p
Choice of Presentation : Oral Presentation

Title : Water Quality Assessment of Atutulala Stream, Kola Village, Modakeke, Ile-Ife.

Author(s) : Omolara T. Aladesanmi, Oluwatosin A. Adedeji, Orimolade I. Oluwatosin, Oladele P. Oluwatosin
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Abstract : This study assessed the physical and chemical quality, exchangeable ions and heavy metal concentrations of Atutulala Stream, Kola Village, Modakeke, Ile-Ife City, Osun State, Nigeria. Water samples were collected from three points in the stream for 12 consecutive months (July, 2015 June, 2016) to cover for both wet and dry season. The physical and chemical parameters (pH, air temperature, water temperature, conductivity, colour, turbidity, total dissolved solids, dissolved oxygen, biological oxygen demand, chemical oxygen demand, total alkalinity, total acidity, total hardness); exchangeable ions (Cl, CN, SO4, NO3, PO3, Ca, Na, Mg, K) and heavy metal concentrations (Pb, Fe, Cu, Cd, Zn, Mn, Cr) were all carried out using standard methods. Data obtained were analysed using analysis of variance (ANOVA) and correlation with SPSS (v21). The results showed spatial and seasonal variations. Statistically, across the sampling points, throughout the sampling period, only lead (0.023±0.024 - 0.063±0.06 mg/l), calcium (0.311±0.101 -1.034±0.992 mg/l) and sulphate (203.262±46.507 - 319.842±66.779 mg/l) showed significant differences (p

Physico-Chemical Quality Of Groundwater In The Vicinity Of Municipal Solid Waste Dump Sites In Osogbo, Southwestern, Nigeria.

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ABSTRACT: This study investigated the physico-chemical quality of groundwater sources (hand dug wells and borehole) close to municipal solid waste dumpsites in Osogbo township, Osun State, southwestern, Nigeria. The extent of seasonal variation pattern in groundwater quality in the study area and the effect of distance from the dumpsites on the investigated water quality parameters were assessed. The quality of the investigated groundwater sources was compared with the guideline of the World Health Organization and the Nigeria standards for potability so as to assess the impact of the dumpsites on groundwater quality within that vicinity.

Groundwater samples were collected from fifteen designated sampling stations over the dry and rainy seasons of one annual cycle and analyzed for some selected physico-chemical parameters of water quality. The investigated water quality parameters comprised physical parameters (ambient air temperature, water temperature, apparent colour, true colour and turbidity) general chemical parameters (pH , electrolytic conductivity, total acidity, total alkalinity, total hardness, bicarbonate and TDS), major ions (Ca^{2+}, Mg^{2+}, Na^{+}, K^{+}, Cl^{-}, NO_3, SO_4^{2-}) oxygen parameters (DO, BOD_5, DO saturation), some trace / heavy metals (Pb, Fe, Zn, Cd, Mn).Well water table and total dept were determined using graduated rope while ambient air temperature and water temperature were determined in situ using a mercury in glass bulb thermometer. Electrolytic conductivity and pH were determined using conductivity meter and lovibond 1000 – model pH comparator respectively. The parameters determined by instrumental methods include: Na^{+} and K^{+} (flame analyzer), SO_4^{2-}, NO_3, apparent colour, true colour and turbidity (colorimetric / spectrometric analysis). Total alkalinity, total acidity, Cl^{-}, Mg^{2+}, Ca^{2+}, total hardness, dissolved oxygen andBOD_5 were determined using applicable titrimetric / volumetric methods while TDS was determined using gravimetric methods. The data obtained were analyzed using the descriptive statistics, ANOVA, regression & correlation analysis, cluster analysis and principal component analysis (PCA).

From the results obtained, there were distinct seasonal variations in respect to ambient air temperature, water temperature, true colour, pH, total dissolved solids, electrolytic conductivity, total acidity, nitrate, sodium, potassium, magnesium, iron, cadmium, manganese, dissolved oxygen, dissolved oxygen saturation, biochemical oxygen demand. Most of the parameters were significantly higher ($p \leq 0.05$) in the dry season than in the rainy season. The impacts of leacheate on water quality generally decrease with distance away from dumpsites for most of the parameters. This generalization was particularly applicable to the concentrations or values of electrolytic conductivity, total dissolved solids, turbidity, chloride, sodium, potassium, total acidity, iron and manganese. The results also revealed that quality of the only borehole in the investigated area was less impacted compared to the typical hand-dug well probably as a result of its high depth. In comparison with both international and Nigeria standards guide levels for drinking water, the water sources close to the dumpsites especially Oke-Bale dumpsite were poor and unsuitable for drinking with respect to colour, pH, lead, cadmium, manganese.

The study concluded that the interstitial water (leachate) from the municipal refuse dumpsites impacted significantly on the physical and chemical quality of the groundwater, especially groundwater sources within the vicinity of Oke-Bale dumpsite, Iludun dumpsite behind ADS Grammar School and Federal Housing Estate dumpsite, Ogo-Oluwa area of Osogbo. Increase in distance away from the dumpsites and location of groundwater upstream of dumpsites

considerably leads to an improved quality of groundwater in the study areas.
Keywords: Groundwater, leachate, dumpsite, physicochemical quality

Title : Biochemical characterisation of alpha amylases isolated from fresh and dried Cyperus esculentus: Kinetics and thermodynamics studies

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Abstract : In this study, α-amylases from fresh and dried Cyperus esculentus (tigernuts) were isolated and biochemically and thermodynamically characterized using standard procedures. The results showed that α-amylases from both fresh (FTNE) and dried tigernut extracts (DTNE) are optimally active at high temperatures of 70 – 80°C. While the activity of α-amylase from DTNE was optimum at an acidic pH of 6, that from FTNE had its optimum activity at a pH range between neutral to alkaline pH (pH 7 to 9). α-Amylases from FTNE and DTNE retained their hydrolytic activities (>150%) over a duration of 1 - 2 hr at pH 6, 7 and 8. The optimum range of incubation duration for both α-amylases was between 20 - 40 mins. Activities of FTNE- and DTNE- α-amylases were more enhanced in the presence of divalent metal ions than monovalent ions especially at a concentration of 10 mM. Apart from NH4+ and Ag+ which enhanced the enzymes' activities, K+ mildly inhibited the enzymes' activities. 10 mM EDTA (a chelating agent) as well as 1,3-dinitrobenzene, 5,5-dithiobis (2-nitrobenzoic acid) and thiourea (1 and 10 mM) enhanced the activities of both α-amylases but 10%(v/v) cyclohexanol, ethanol, ether and diethylamine inhibited them. The Vmax and Km of both FTNE- and DTNE- α-amylases were 9.36 and 18.32 U/mg protein and 6.49 and 0.73 mg/mL, respectively, using soluble starch as substrate. Kcat/Km values for both FTNE and DTNE α-amylases were highest (2.71 and 4.44 mL. mg-1sec-1, respectively) for yam flour indicating it as most preferred substrate among others investigated. FTNE- and DTNE- α-amylases had activation energies (Ea) of 10.95 and 36.51 KJ/mol, with free energies of substrate binding (ΔGE-S) of 5.33 and -0.90 KJ/mol, and free energies of transition state binding (ΔGE-T) of 6.05 and -2.22 KJ/mol, respectively, at 70°C. These enzymes have potentials for industrial applications.
Key words: Cyperus esculentus; alpha amylases; characterisation; kinetics; thermodynamics

Title : Evaluation of Oxidative stress in African Catfish Clarias gariepinus (burchell, 1822) Exposed to Varying Concentrations of Lead Chloride

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Abstract : The study evaluated lead-induced oxidative stress in Clarias gariepinus, to determine the median lethal concentration (LC50), the histopathological effects of Lead on the fish tissue. This was with a view of providing information on extent of damage caused by lead metal on the tissue of African catfish (Clarias gariepinus). The oxidative stress of lead on fish was tested in a statics bioassay for 96 hrs to assess median lethal concentration of lead on C. gariepinus. The concentrations used for the sub-chronic toxicity test were determined based on the results on median lethal concentration (LC50) obtained from the acute test. The oxidative stress from long term exposure to lead metal evaluated histopathological alterations and some selected anti-oxidants enzyme activities using standard protocols. Data obtained were subjected to appropriate descriptive and inferential statistics. Acute toxicity was recorded at 426 mg/L with 100 % mortality in higher concentrations. The biochemical studies of the tissues showed a significant.

Title : In-Vitro Evaluation of Potential Hepatotoxicity Induced By Detergent-Processed Cassava Product

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Abstract : Toxic effects of cassava-based products on humans have been established. The recent use of detergent in processing cassava into food products such as fufu (a local delicacy Nigeria), may exacerbate its toxic effect. This study determined the hepatotoxicological effect of detergent-processed fufu on Wistar rat. The liver is a heterogeneous organ which is involved in detoxification of xenobiotics and is highly susceptible to injury from these substances. With the increase in chronic diseases among the Nigeria growing population, there is need to look beyond pathogenic and infectious diseases and focus on public health nutrition. Rat models were used in assessing the degree of damage caused on the haematological and hepatological parameters. Graded concentrations (7.5mg/L, 15mg/L and 22.5mg/L) of detergent was used in fermenting cassava for making the fufu which was used in the study. Wistar rats were given 7 feeding treatments (TRT): TRT I – positive control (commercial rat feeds only); TRT II – positive control (fufu only); TRT III – negative control (detergent only), TRT IV – designated control (Fufu bought from the open market), TRT V – VII (fufu plus graded concentrations of detergent). Liver marker enzymes were assayed in the plasma and liver homogenate, blood parameters were also analysed after four weeks of treatment.. Levels of marker enzymes such as Alanine Aminotransferase (ALT), Aspartate Aminotransferase (AST), and Alkaline phosphatase (ALP) were increased significantly across all the detergent treatment groups and TRT II and IV, while plasma ALP only increased in TRT III . No significant difference was observed in the liver homogenate except in AST which showed increase across all treatment groups except group VIII. There was no significant difference in the blood parameters across all groups. The present observations suggested that consumption of detergent-processed fufu poses risk to the liver while the blood parameters remain unaffected KEYWORDS: Hepatotoxicity, Cassava, Detergent, Haematology, Wistar rat

Title : Deterioration and Microbiological Evaluation of Information bearing Paper at Redeemer's University

Author(s) : Femi AYOADE and Samuel AMONA
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Abstract : In spite of the global trend of storing information electronically, large amounts of vital information are still archived on paper as printed materials in print. These are prone to deterioration and are kept at the risk of losing valued information. Air samples at the University library, clinic and registry were evaluated for microorganisms that are capable of causing paper deterioration and the physical environments were assessed for ability to predispose paper to bio-deterioration. Using the sterile swab stick, microbial samples were collected from randomly selected books and documents exhibiting signs of deterioration such as brown discolouration (foxing). Air monitoring was done by using the open plate method. Results showed that printed materials were stored at sub-optimal environment required for prevention of paper deterioration at all locations. Moreover, similar microorganisms found dominating the air in sampled locations were found on the foxing spots on deteriorating printed materials. The bacterial organisms recovered from the samples were Lactobacillus casei and Staphylococcus aureus while the fungal organisms were Aspergillus niger, A flavus, Penicillium sp., Rhizopus sp and Alternaria sp. Furthermore, Aspergillus flavus was the highest occurring fungal organism isolated, followed by Alternaria sp., Rhizopus and Penicillium sp in descending order of occurrence. The highest colony count 1.7×10-5cfu/cm2 for bacteria was found in books sampled from the library, while the lowest bacterial colony counts (0.2×10-5) were found in printed materials sampled from the clinic and the registry. The higher human activity such as improper book handling and discharge of aerosol by library users perhaps accounts for the highest occurrence of bio-deterioration organisms found at this location. These results underscore the importance of providing suitable ambience and moderating human activities to limit bio-deterioration of printed materials to prevent deterioration of printed materials. Key words: paper deterioration, air monitoring, foxing spots, Staphylococcus aureus

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POLICY AND SOCIO-ECONOMICS

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Title : THE CASE FOR POPULAR CULTURE IN ACHIEVING SUSTAINABLE DEVELOPMENT IN AFRICA: THE EXAMPLE OF VIDEO FILM IN NIGERIA

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Abstract : The rave is up again to achieve Sustainable Development Goals (SDGs) in Africa, after time ran out on the Millennium Development Goals (MDGs). While different actions are being taken to further improve on the SDGs from the failures of the MDGs, and several researches and policies are being initiated to improve the chances of achieving SDGs in Africa; not much is being done in the aspect of taking full advantage of popular culture of Africa in the achievement of SDGs. Popular culture, especially the video film media has been an effective tool for social development since the colonial era. In recent times, the video film media is so dynamic that it adapts in line with the developments in Information and Communications Technology (ICT) and has remained relevant in entertaining, shaping and informing the society. However, this important tool of development is often written off as just an 'unserious' entertainment media by policy makers implementing SDGs policies. This paper thus, makes a case for popular culture, the video film media in particular, in the development of SDGs strategies for a healthy environment. The paper hopes to establish that more

than is presently admitted, the video film media is very central to the achievement of SDGs. The study traces the origin and history of popular culture, dwelling on the history of the video film media and its uses to the colonial agenda. The study will also examine the present impact that popular culture, especially the video film, is having on present day Africa, with Nigeria as a case study. The study will then suggest ways in which the video film media can be useful in the achievement of SDGs on health and environment in Africa. Keywords: Sustainable Development Goals Video Film SDG in Africa Nigerian Video Film Health

Title : DEMOGRAPHIC AND ENVIRONMENTAL RISK FACTORS ASSOCIATED WITH ACUTE RESPIRATORY INFECTIONS AMONG CHILDREN UNDER FIVE YEARS OF AGE IN NIGERIA

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Abstract : Background In sub-Saharan African countries, acute respiratory infections (ARI) is responsible for one out of five child deaths. Despite the improvement in health sector in Nigeria and globally, acute respiratory infections are still among the leading causes of childhood morbidity and mortality in Nigeria. This study assessed the demographic and environmental risk factors for acute respiratory infections among children under five years of age in Nigeria. Method This study employed secondary data extracted from the most recent Nigerian Demographic and Health Survey (NDHS, 2013). The research design was cross-sectional using kids' data from 31,482 surviving children under five. Bivariate associations with acute respiratory infections were tested at significant level of (pve acute infections (OR=1.750, CI: 1.357-2.257); women aged 21 and above were less likely to have children who experienced acute respiratory infection (OR=0.979, CI: .7000- 1.369); non-working women were less likely to have children who experienced acute respiratory infection (OR:837, CI: 0.665-1.055). Conclusion Acute respiratory infections (ARI) are highly prevalence among children between the ages of 12-24 months, timely attention with the use of antibiotics can help stem the threat. Community based awareness about acute respiratory infections symptoms and effective environmental sanitation will greatly reduce the prevalence or totally eradication among under five children. Keywords: Acute Respiratory Infection, Nigeria Demographic Health Survey, Sub-Saharan Africa, community

Title: Federal Government of Nigeria School Feeding Programme Policy: Achievements, Challenges and Posssible Improvement - Osun State as a Case Study

Author(s): I.O. Otemuyiwa[1], O. Oluwasola[2], O.S. Falade[1] and S.R.A. Adewusi[1]
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Ile-Ife

Abstract: An estimation of 30 million children in Nigeria is believed to be in primary one to three that the Home Grown School Feeding Programme (HGSFP) scheme targeted. The aim of the programme is to improve school attendance and health status by providing one meal per day for pupils in the elementary school (ages four to seven). This age bracket is the critical stage in the mental development of a child, hence the need for nutritious foods. This study was undertaken to know how far the scheme has achieved its aim, the challenges and possibility

of adding value to the scheme to make it better at reduced cost. The research visited the project coordinator of Osun State Home Grown School Feeding Programme (O-Meal) at the Osun State Secretariat Osogbo, to gather information on their operational methods, achievements and challenges. The information obtained from the O-Meal Table of menu (comprises all food items served per day) was used to calculate nutrients (protein, minerals, vitamins and energy) intake per day. The results of the nutrients intake were used to suggest better food combinations that can provide recommended dietary allowance (RDA) for each of nutrients at cheaper cost. The quality of the foods served by the Osun State HGSFP seemed adequate in term of RDA of some of the essential nutrients. The cost and nutrient analysis showed that the manipulation of the food combination aside from the present practice would improve both quality and quantity of nutrients intake at lower cost. Osun State HGSFP should be taken a model that other States should follow but with some modifications. The continuation of the programme would no doubt prevent malnutrition, improve the mental development of this group of Nigeria population and enhance school attendance.

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POSTERS AND EXHIBITION

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Title : Evaluation of Nickel-Induced Genotoxicity and Histopathological Alterations in the Liver of Clarias gariepinus Burchell 1822 Post-juveniles

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Abstract : Behavioural changes, possible histopathological alterations and effects of nickel on the liver DNA of the exposed fish was evaluated in this study. A range finding test was carried out prior to the definitive test to determine the 96 hour median lethal concentration (LC50) of Nickel Chloride. The experiment consisted of two control tanks (each for the male and female set-up) and four (10, 20, 30 and 40 mg/L) acute concentrations of nickel in duplicate with each treatment containing five fishes per tank. Behavioural changes were observed 12 hourly, for 4 days. At the end of the 4-day exposure, two fishes per concentration were randomly selected and their livers excised for histopathological analysis. Genetic analysis was performed, using the Random Amplified Polymorphic DNA Polymerase Chain Reaction (RAPD-PCR) while heavy metal analysis was carried out on these liver samples, using the Atomic Absorption Spectrophotometry. All the treated fish exhibited mild to severe behavioural abnormalities such as unusual and erratic swimming, irregular opercula movements, gulping of air, restlessness, bending and loss of equilibrium. The LC50 value for the acute toxicity was 21.45 mg/L. The histopathological examination of the liver samples revealed alterations such as dialated sinusoids that are not radially apparent, dialated central veins, numerous intracytoplasmic vacuolations, distorted histoarchitecture as well as lyphmphocytic infiltrations. The RAPD analysis showed DNA damage in the liver of treated fish samples compared to

the control. Electrophoretic images revealed bands mostly from 200 to 800 bp and more bands were revealed in female fish samples as compared to the male fish samples. The study concluded that Nickel Chloride altered normal behavioural patterns, caused several histopathological alterations and DNA damage especially in female C. gariepinus.

KEYWORDS: Genotoxicity, Nickel, Clarias gariepinus

Title: Preliminary investigations of lead dynamics in blood and milk of lactating Nigerian subjects

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Abstract: After decades of extensive use, Nigeria switched from leaded gasoline to unleaded in 2003. Consequently, significant decline in blood lead levels have been reported in the country. However while this has considerable positive implications for health, most of body lead is stored in the bones, and these compartments respond much more slowly to removal of exogenous lead, with half life measured in decades. Rapid turnover from these storage sites is however associated with pregnancy and lactation; and thus could pose considerable health risk to that segment of human population that is most susceptible to lead – fetuses in the womb and breastfed babies. In this study, we have used Inductively-Coupled Plasma Mass Spectrometry (ICP-MS) to compare levels of lead (and the essential elements copper, zinc and selenium) in the blood of 48 lactating women in Ile-Ife, Nigeria with 62 non-pregnant, non-lactating women of comparable social-economic status in the same city. Furthermore, determination of these elements in the blood and milk of ten of the lactating women was repeated after four months to check the dynamics of lead in maternal blood and milk during lactation. Average Blood Lead Level for non-lactating women was 6.81 ± 2.61 µg/dL while that for lactating women was 9.65 ± 4.77 µg/dL. Blood levels of copper and zinc are similar in the two groups, but that of selenium is lower in the lactating women (0.2 ± 0.04 versus 0.4 ±0.2 µg/mL). The gross average for blood lead in ten lactating women changed from 9.82 (±1.71) to 8.81 (±2.1) µg/dL 4 months after; while milk lead changed from 2.9 (±1.5) to 2.8 (±1.5) ng/mL in the same period. In this preliminary report, the influence of confounding factors (such as mother's age, parturition, and parity) affecting the volume, availability and general dynamics of lead in individual subjects has not been considered. Data from these ICP-MS determinations are being used to calibrate a kinetic model for lead dynamics in blood and milk of Nigerian women, which we are currently developing. Some outputs from this model are presented.
Key words: ICP-MS, blood lead, milk lead, Lead Kinetic Model
Supported by Research Contract NIR 15828 of the International Atomic Energy Agency, Vienna

Title : **Modelling of soil temperature with depth and implications for sustainable development**

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Abstract : This work reports a model to determine the soil temperature of the soil for a predefined depth under the surface of the soil at any day of the year. Transient heat flow principle was used with the assumption that the heat flow in the soil was one dimensional and that thermal diffusivity

was constant for each year Daily soil temperature at various depths, 5cm, 10cm, 20cm, 30cm, and 50cm were estimated. Values of thermal diffusivity (Dv) for 2011, 2012, and 2013 were 0.2299cm2/hr; 0.0336cm2/hr; 0.1345cm2/hr respectively and these values were assumed to be constant throughout the year. Secondary data for soil temperature at the study area (Osogbo, Osun State) for those year and depths were collected from Nigeria Meteorological Service (NIMET) Nigeria. The annual and diurnal soil temperatures were properly modelled with fairly good accuracy. Plots for the observed and the predicted soil temperatures at depths 5cm, 10cm, 20cm and 30cm for different days of the year and the Chi – square statistics showed good agreement between observed and the predicted values thus confirming reliability of the model. Variations between observed and the predicted soil temperatures were assessed at all the soil depths (5cm, 10cm, 20cm, 30cm, 50cm and 100cm) with the use of (SPSS) version 19. Damping depths for the study area over the diurnal cycles were 19.36cm, 19.67cm and 25.32cm for 2011, 2012 and 2013 respectively. The average annual absolute errors (AE) varied between 1.15 to 2.82 0C over all soil depths The results from this study could be used in predicting soil temperature variations at different depths for specified days of the year and times of the day. It has strong implications for agriculture and sustainable development in the nation.

EXHIBITION

Design and Economic Analysis of Biogas Power Plant as a Refuse Use

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Abstract: This paper is focused on the economic analysis of biogas power plant production, purification, storage, electricity generation and reuse of exhaust from generator by using local materials. Economic analysis involve six parameters which are Production Analysis Value (PAV), Cash Budget Balance (CBB), Total Current Asset (TCA), Net Present Value (NPV), Internal Ratio of Return (IRR) and Payback Period (PP). The sum of the production (£P) was the mathematical modeling $£P = A^{2}_{x=1,2,3.....} + R^{1}_{x=1,2,3.....} + W^{6}_{0.}$ Animal waste (A), plant/crop residue (R) and water (W) indicates the feasibility of biogas power plant. The biogas power plant was calculated by substitution and modification of data obtained by comparing 3.5kwh diesel generator with modified dual fuel biogas used for six hours per thirty days in three bedrooms flat. The result shows in ratio (1:9) diesel generator and dual fuel biogass. Biogas power plant is feasible as relate to the parameter used. PAV>0, TCA>CBB, IRR>0 and PP>0. The achievement based on using local materials is feasible, reuse of the exhaust smoke is feasible, but diesel generator is partially feasible and waste material is partially feasible.

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Implications and required actions consequent to Nigeria's ratification of Minamata Convention

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On **** Nigeria became the *** country to ratify the Minamata Convention regulating the emission of mercury…. This paper examines the implications of the signing and what is required for compliance. It is observed that many of these are not on ground at the present time. Suggestions are proferred to remedy the situation.

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Need for re-examination of Nigeria's current standards and regulations on Microwave radiation in telecommunication

Joshua Olufemi Ojo and Adeleke Ismail Ajani

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National Environmental Standards and Regulations Enforcement Agency, SW Zone, Ibadan

For years, there has been an on-going lively debate on possible adverse health impacts of microwave radiation arising from the telecommunication industry. What assumptions are made on the mode of action of thee non-ionizing radiation (in the range 9Hz for cell phones) and **** for telecommunication masts can result in assumed safe levels differing by several orders of magnitude. In general, operators and regulators in the telecommunication business are more concerned about good service delivery and they assume that the only adverse effects of non-ionizing radiation arise from thermal effects where temperature elevation by a few degrees celcius could disrupt several biochemical components of the cell. Under this assumption, radiation of up to 9.2 mcW/m2 are safe. This is the basis for ICNIRP prescription, first made in ((((and revised in ******. However, the literature is inundated with adverse health effects associated with far less microwave power level. Such non-thermal effects are postulated to arise from ******. We therefore have countries such as **** and **** where the standards allowed are as low as 0.000000.. a millionth the dose allowed by ICNIRP. In general, only very few countries fix their regulations based solely on ICNIRP suggestion. It is of concern that Nigeria is one of such. This paper examines factors that need to be considered to obtain a safer microwave radiation level without necessarily killing the telecommunication industry. (especially as 5G and internet of all things beckon)

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Comparison of the absorbed dose in brain for Hg in children from regular exposure routes and from thimerosal-containing vaccines

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Using a validated physiologically-based kinetic model desribing theabsorption, distribution, metabolism and excretion of both ethyl mercury and methl mercury, the amount of each substances deposited in brain of children was estimated in turn for exposure from air, diet (fish) and drinking water. Input data for exposure for the various routes were taken from the literature. Cummulative absorbed dose values from these regular exposure routes were than compared with those resulting from intramuscularly administered thimerosal-containing vaccines (TCV)under the current regimen

recommended for childhood vaccines in Nigeria. The influences of child birth weight was also investigated.

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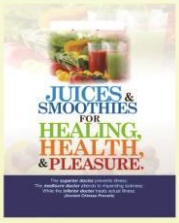


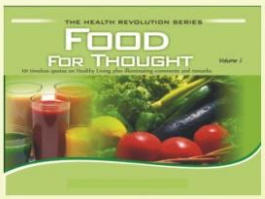


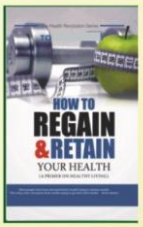




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