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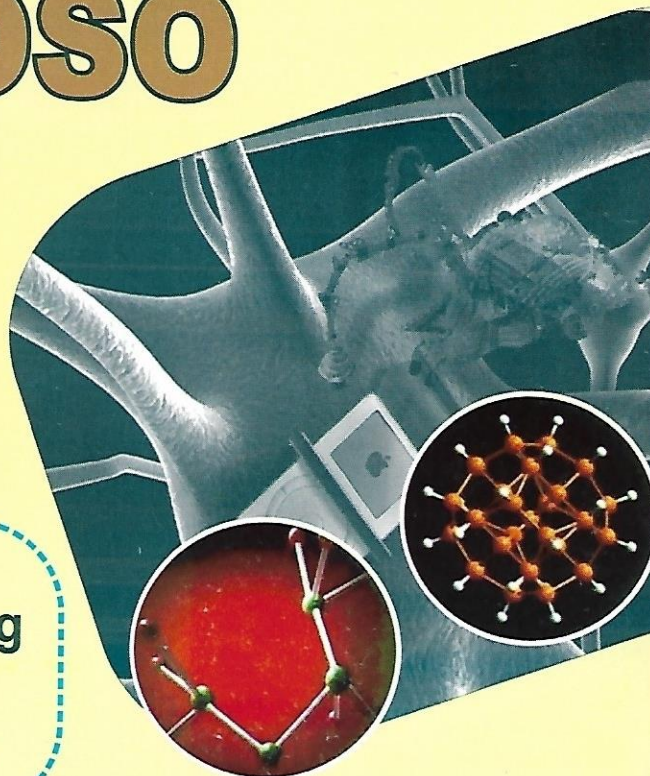


Alexander von Humboldt
Stiftung / Foundation

OGBOMOSO 2011

Theme:

Potential Applications of
Nanotechnology in Developing
Countries of West Africa:
Trend of Research Activities



July 4-7, 2011



SENATE CHAMBER
Ladoke Akintola University of Technology,
Ogbomosó, Nigeria.

Programme & Abstracts

PROGRAMME OF ACTIVITIES

Date and Themes	Time	Activity
ARRIVAL: JULY 3, 2011		
	4.00 pm	Arrival of guests
DAY 1: JULY 4, 2011		
Opening Ceremony	8.00 am.	Arrival and registration of participants.
	10.00 am	Introduction of guests. (University PRO)
	10.10 am	Welcome address by the Vice-Chancellor- Prof M.L. Nassar
	10.20 am	Short Address by the Convener Dr S.O. Jekayinfa
	10.30 am	Short Speech on AvH Foundation Sponsorship Programmes: Prof Remi Sonaiya
	10.45 am	Short Speech by the German Ambassador to Nigeria
	11. 00 am	Keynote Lecture: Prof T.S. Ibiyemi From Macro-Technology to Micro-Technology and now Nano-Technology-Nigeria where are you?
	11. 40 am	Group photograph
	11. 55 am	Coffee break
1st Plenary/Technical Session Chairman: Prof Remi Adeyemo Rapporteur: Prof Banwo O.O.		
Invited Paper	12.05 pm	Zinc salt Mediated Synthesis and Characterization of Shaped Silver Nanoparticles and Silver core - Zinc oxide shell nanocomposite Dare, E. O., Makinde, O.W. , Ogundele, K.T. ,Osinkolu, G.A. , Fasasi, Y.A., Sonde, I. Bamgbose, J.T., Maaza, M. , Sithole, J. Ezema, F., Akinlabi, A.K. Adewuyi, S.A., Amolegbe, S.A.

	12.25 pm	Effect of Co/Zn/Al, Co/Zn, Co/Al and Vanadium β -diketonate as catalysts in the synthesis of carbon nanotubes Ezekiel D. Dikio
	12.35 pm	Polycyclic Aromatic Hydrocarbons Profile of Soil from Some Polluted Sites in Niger Delta, Nigeria. T.A. Adedosu, H.O. Adedosu, O.S. Sojinu, A.O. Ibrahim, I.A. Bello and A.A. Olajire.
	12.45 pm	Elemental and Carbon Isotopic Compositions of Mamu Coals, Anambra basin, Nigeria: Implication on Petroleum Potential. Taofik, A. Adedosu, Oluwadayo, O. Sonibare, Jincal TUO, Olusegun, Ekundayo
	12.55 pm	Adsorption of Reactive red 120 textile dye by waste tea activated carbon through batch process Manase Auta
	1.05 pm	Kinetics And Equilibrium Studies Of Removal Of Methylene Blue By Adsorption On Melon Husk Olajire, A.A., Giwa, A.A., Bello, I.A. and Adeoye D.Q.
	1.15 pm	Cost analysis of using low cost adsorbents for removal of Congo red from aqueous solutions Olugbenga Solomon Bello, Mary Adelaide Oladipo
	1.25 pm	<i>Imperata cylindrica</i> leaf powder as an effective adsorbent for removing Congo red dye from aqueous solutions Olugbenga Solomon Bello, Semire Banjo
	1.35 pm	General question time
	1.55 pm	Lunch Break

2nd Plenary/Technical Session

Chairman: Prof. Dr. J.O. Ogunji

Rapporteur: Dr. Arogunjo

Invited Paper	2.30 pm	Dr E.O. Dare Sol-gel process as nanostructuring phenomenon
	2.45 pm	Synthesis, Characterisation and Microbia Studies of [Bis (1,10 phenanthroline) (ethylenediamine) copper (II) diperchlorate and Its Bromide anions Onawumi O.O.E, Ibrahim O.A., Adekunle F.A, Faboya O.O.P and Odunola O.A
	2.55 pm	An Environmental Audit of Methylene Chloride-blown Batch and Continous Polyurethane Foam Production Processes: Emission Qualitative Distribution, Auxiliary Blown Agent Tunnel Concentration and Diffusion Coeficient Estimations. L. A. Jimoda
	3.05 pm	Effects of Biotechnology and Nanotechnology on Chemical, Plastic and Allied Industries Eleburuike Naimat Abimbola
	3.15 pm	Preparation of Polymer fibers Functionalised with Acrylamide by Boiling Temperature Soap-Free Emulsion Polymerization prior to Electrospinning Oketola, A.A. and Torto, N.
	3.25 pm	Optimization of preparation conditions for activated carbon from oil palm empty fruit bunch for adsorption Acid red 1 dye using response surface methodology Manase Auta
	3.35 pm	Questions/Discussions
	3.50 pm	Coffee break

3rd Plenary/Technical Session
Chairman: Prof. Dr Edith O. Ajaiyeoba
Rapporteur: Dr. J.C. Onyekwelu

	4.00 pm	Application of natural polymers as nanomaterials for pharmaceutical drug delivery: A review Olufunke C. Babalola, Adenike Okunlola, and Oluwatoyin A. Odeku
	4.10 pm	Nanomaterials for Pharmaceutical Applications John O. Ayorinde and Oluwatoyin A. Odeku
	4.20 pm	Compression of Medical Images in Picture Archiving and Communication Systems D.A. Alamu F.O., Emuoyibofarhe O. J., Awokola J.A and Oyeleke O.R.
	4.30 pm	Intelligent Nanosensor Based Footwear for Skin Breakdown Monitoring in Diabetes Patient. J.O. Emuoyibofarhe, O.R. Oyeleke, and F.O. Alamu
	4.40 pm	<i>Balanites aegyptiaca</i> Carbohydrate Fractions and the Effect of Aqueous Extract of Mesocarp on Some Blood Parameters of CCl ₄ Induced Rats Oloyede, O. B. and Salihu, M.
	4.50 pm	Healthcare personnel's perception and degree of willingness to adopt Intelligent Mobile Biomedical Sensors (IMBS) in Nigeria. O.R. Oyeleke, J.O. Emuoyibofarhe and F.O. Alamu
	5.00 pm	Detection and Quantification of Phenol using oxygen probe and chitosan film entrapped tyrosinase David Morakinyo Sanni, Yi Liu, Mofoluso M. Ekperigin and Gregory Payne

	5.10 pm	The Role of Nanotechnology in Development and Poverty Alleviation Foluso Temitope Agulanna
	5.20 pm	Developing A Robust Multimedia Picture Archiving And Communication System (Pacs) Alamu F.O., Emuoyibofarhe O. J., Awokola J.A and Oyeleke O.R.
	5.30 pm	Food security in Nigeria through Veterinary Nanotechnology Nicodemus M. Useh
	5.40 pm	General question time
	6. 30 pm	Cocktail Party @ FET CAD Centre

Day 2: JULY 5, 2011**4th Plenary/Technical Session**

Chairman: Prof. Engr. K. A. Taiwo

Rapporteur: Dr. K. Akinyemi

LEAD PAPER	9.10 am	Keynote Speaker: Prof. M.A. Waheed Advances in Nanotechnology: Lessons for Developing Countries in West Africa
	9.40 am	Studies On Cellulase Production Using Selected Agricultural Waste Cultured On <i>Aspergillus Niger</i> A.F. Abubakar
	9.50 am	Development of a Micro-Mobile Program for Application in Wastewater Treatment Oluwatosin Olofintoye and Josiah Adeyemo
	10.00 am	Effects Of Varying Levels Of Inorganic Fertilizer Application On The Underground And Nutritive Reponse Of <i>Panicum Maximum</i> Cv T58 (Guinea Grass) Aderinola Olusola Adewumi
	10.10 am	Application Of Nanotechnology In Livestock Production: A Review Banjoko, O., Olugosi, O.A., Dada, O.O., Agbede, J.O. and Aletor, V.A.
	10.20 am	Environmental Impact of Agricultural Wastes on Groundwater Quality in Lipakala Farms Ondo, Nigeria Christopher O. Akinbile
	10.30 am	Effects Of Antibiotic Residue On The Physical Qualities Of Beef Sold For Human Consumption In Oyo State, South West Nigeria Akinwumi A.O., Olatoye, I.O., Odunsi, A.A., Omojola, A.B., Rafiu, T.A and Oladunni, M.O.
	10.40 am	Physiological Response Of Rabbit Bucks To Prolonged Feeding Of Cottonseed Cake-Based Diets Supplemented With Vitamin-E Amao, O.A., Adejumo, D.O., Togun, V.A. and Oseni, B.S.A.
	10.50 am	Efficiency Of Water Use And Irrigation Practices On Yeild Of Jute Mallow (<i>Corchorus Olitorius</i>) Ezekiel, A.A. and S.R.A Adewusi
	11.00 am	Morphological And Molecular (SSR) Based

		Diversity Studies Of Some Cassava (<i>Manihot esculenat</i> , CRANTZ) Germplasm In Ghana P. A. Asare, I. Galyuon, J. P. Tetteh and J. K. Sarfo.
	11.10 am	Characterization of isolated LAB from Nile tilapia as probiotics and the use for growth promotion and immune enhancement in the fish Nwanna, L.C, E. K. Ajani and S. F. Bamidele
	11.20 am	Problems and prospects of nanotechnology in agricultural production : implications for curriculum development in agricultural extension. Israel Ogunlade, Sarah Nicholas Oden and Henry O. Owolabi,
	11.30 am	Nanotechnology applications In Animal Production: Prospects And Challenges In Nigeria (A Review) Ojebiyi O.O., Emiola I.A. Asaolu V.O., Oladunjoye I.O. and Shittu M.D.
	11.40 am	Bio-Agricultural Detoxifier Using Nano-Technology To Produce Activated Carbon T.B. Onifade
	11.50 am	Simulation Studies of Post Exit Orifice Behaviour of Nanodroplets Discharged from High Pressure Agro-Forestry Swirl Nozzle Adewunmi Taiwo and Owusu-Sekyere, J.D.
	12.00 pm	Questions and Discussion
	12. 20 pm	Coffee/tea Break
5th Plenary/Technical Session Chairman: Prof. Dr.T.O. Adejumo Rapporteur: Dr. A.S. Onawumi		
	12.30 pm	Nanoscale Modeling of Moisture Movement in Agricultural Soils Owusu-Sekyere, J. D and Adewunmi Taiwo
	12.40 pm	An Overview of the Risk of Using Nanotechnology in Agricultural Food Production Adejumo B.A., Ola F.A., Adejumobi M.A. and Adebayo, J.M

	12.50 pm	The Potentials Of Nanotechnonolgy In Food Processing And Packaging (An Overview) Adejumo B.A.
	1.00 pm	Performance and Biochemical response of meat chickens to differently processed castor bean (<i>Ricinus communis</i> Linn.) cake J Akande T.O and Odunsi A. A
	1.10 pm	Proximate composition and fatty-acids profiles of an underutilized leguminous seed (<i>Parinari curatellifollia</i>). M.O Bello, A.O. Oladimeji and Q.A. Akinwale
	1.20 pm	Physicochemical Properties and Fatty Acids Profile of Seed Oil of <i>Telfairia occidentalis</i> , Hook, F. M.O. Bello T.L., Akindele, D.O. Adeoye and A.O Oladimeji
	1.30 pm	Biochemical Study Of Some Fruits In Northern Nigeria Salihu, M.
	1.50 pm	Lunch Break
6th Plenary/Technical Session Chairman: Prof O.O. Otunola Rapporteur: Dr. Mrs B.A. Adejumo		
	2.40 pm	Application Of Nanotechnology In Water Treatment Akpotu, S.O. and Oketola, A.A.
	2.50 pm	Fate Of Manufactured Nanoparticles In The Environment Akpotu, S.O. and Oketola, A.A.
	3.00 pm	Synthesis of nanopowders and their potentials to remove contaminants from water and wastewater. Omotayo Sarafadeen Amuda, Asiata Omotayo Ibrahim and Yung-Tse Hung
	3.10 pm	Effects of Particulate Matter on Human Health, Ecosystem, Climate and Materials: A Review L. A. Jimoda

	3.20 pm	Water Treatment and Remediation using Nanotechnology R.T. Musa
	3.30 pm	Communicating Nano Technology For Poverty Reduction Through Concept Mapping Sarah Nicholas Oden and Israel Ogunlade
	3.40 pm	Impact of Nanotechnology -enabled Information Technology (Nanoelectronics) on the Millenium Development Goals Bukola Abimbola Onyekwelu
	3.50 pm	Overview of One-minute Rain Attenuation Models Semire, Folasade Abiola , Rosmiwati Mohd-Mokhtar
	4.00 pm	Quick Determination of Dry Matter Content of Cassava (<i>Manihot esculenta</i> , Crantz) Tubers In the coastal savannah of Ghana Teye, E., Amoah, R. S., Asare, A. P. & Tetteh, J. P.
	4.10 pm	Question time
	5.00 pm	Cultural Outing
	6. 40 pm	Dinner

Day 3: JULY 6, 2011**Workshop on Capacity Building for Research Proposal Writing**

Chairman: Prof. J.O. Ojdiran

Rapporteur: Dr J.O. Emuoyibofarhe

	10.00 am	GUEST SPEAKER: Prof P.O. Ngoddy Capacity Building For Research Proposal Writing
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	12.00 pm	<i>Questions/Discussions/Tea/Coffee</i>
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7th Plenary/Technical Session

Chairman: Prof J.O. Olajide

Rapporteur: Dr. L.A. Jimoda

	12.30 pm	<i>Fractal Analysis Of The Particles In Cryomilled Nanosructured Alloys</i>
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Durowoju M.O and Oladosu K.O.

	12.40 pm	Numerical Investigation Of Temperature Dependent Properties Of Nanofluid In A Cavity
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Sangotayo, E. O., Waheed, M. A. and
Olajide, J. O.

	12.50 pm	Investigations on Energy Potential of Maize Cob under Anaerobic Digestion at Mesophilic Condition
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A.O. Adebayo, B. Linke and S.O.
Jekayinfa

	1.00 pm	More Energy Through Nanoparticles
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Awodugba, A.O.

	1.30 pm	Lunch
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8th Plenary/Technical Session

Chairman: Dr. K.A. Adebisi

Rapporteur: Dr M.O. Durowoju

	2.10 pm	Pyrolytic Conversion of Palm Kernel Shells to Medium-Grade Fuels
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E. B. Lucas and O. E. Itabiyi

	2.25 pm	Mathematical Modelling Of Plastic Waste Pyrolysis Kinetics
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Ojolo, S. J., Ismail, S.O, Sobamowo,
G.M.

	2.40 pm	Development of a Laboratory Scale Updraft Gasifier
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S. J. Ojolo, S. M. Abolarin, G. M.
Sobamowo and O. Adegbenro

	2.55 pm	Potentials of nanotechnology application in Energy generation Olaniran, J.A. and Jekayinfa, S.O.
	3.15 pm	Biodiesel production from some vegetable oils using two-step transesterification method and nanotechnology. O.O. Oniya and A.I. Bamgboye
	3.30 pm	Constraints To Agricultural Engineering Development In Nigeria A. B. Fashina and Saleh Aminu
	3.45 pm	Effects Of Agitation And Slurry Ratio On The Properties Of Poultry Manure Biogas A. B. Fashina and Saleh Aminu
	4.00 pm	Nanotechnology In Agrifood: An Overview K.O. Oriola
	4.15 pm	Phenotypic Relationship Between Average Litter Weight, Parental Effect And Weaning Traits Of Chinchilla Crossbreed Rabbits Ojediran, T. K., Salako, A. E., Akanni, K. T., Osaiyume. H. O., Adedeji, T. A. and Ige, A. O.
	4.25 pm	Importance Of Nanotechnology In Solar Drying O.S. Olaoye, M.A. Waheed and G.A Odewole
	4.35 pm	Effect Of Ionospheric Scintillation And Terrestrial Fading Channel With Orthogonal Frequency Division Multiplexing On Mobile Satellite Link Zachaeus K. Adeyemo, David O. Aborisade and Robert O. Abolade
	4.45 pm	The Increase of Seedling Vigour in Wheat (<i>triticum aestivum</i> L.) By tio_2 Nanoparticles Application Hossein Aliabadi Farahani , Payam Moaveni , Kasra Maroufi and Kamelia Karimi Rouzbahani
	5.00 pm	Questions/Discussions
	5.30 pm	Closing/Conference Communiqué/Conference Evaluation
	6.30 pm	Dinner

Day 4: JULY 7, 2011

Latest
12.00noon

Final departure

OPTIMIZATION OF PREPARATION CONDITIONS FOR ACTIVATED CARBON FROM OIL PALM EMPTY FRUIT BUNCH FOR ADSORPTION ACID RED 1 DYE USING RESPONSE SURFACE METHODOLOGY

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The need to harness potentials of wealth from environmental waste was awakened in this research. This was done by investigating the optimal conditions for preparation of activated carbons from oil palm empty fruit bunch (OPEFB) for adsorption of Acid red 1 (AR1). The OPEFB activated carbon was prepared by chemical activation method using potassium hydroxide under purified nitrogen atmosphere. The preparation conditions investigated were activation temperature, chemical impregnation ratio (KOH:char) IR, and activation time. Two models were developed from central composite design (CCD), which were used to determine the effects of the preparation conditions of OPEFB yield and AR1 adsorption. The CCD optimal preparation conditions determined through analysis of variance ANOVA were: activation temperature 820 °C, IR 2.5, and 140 min, which translated to 19.12% yield and 197.62 mg/g (98.81%). There was good correlation between the experimental results and the predicted models obtained. The Brunauer Emmett Teller (BET) analysis of the activated carbon prepared at optimum conditions had a surface area of 820 m²/g, total pore volume of 0.52 cm³/g and scanning electron microscopy SEM was carried out to determine its surface morphology.

Keywords: Oil palm empty fruit bunch, Acid red 1 dye, Central composite design, Adsorption, Chemical activation.