

NANOTECHNOLOGY RESEARCH GROUP

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LAUTECH Nanotechnology Research Group
...Enabling Qualitative Research at the Smallest Scale



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COMMUNIQUE ISSUED AT THE END OF 3-DAY WORKSHOP/CONFERENCE ON 'NANOTECHNOLOGY APPLICATIONS IN AFRICA: OPPORTUNITIES AND CONSTRAINTS' ORGANIZED BY LAUTECH NANOTECHNOLOGY RESEARCH GROUP (NANO⁺) HELD ON 22-24 OCTOBER, 2019 AT THE HALL, LADOKE AKINTOLA UNIVERSITY OF TECHNOLOGY, OGBOMOSO, NIGERIA.

Preamble

LAUTECH Nanotechnology Research Group (NANO⁺) is a multidisciplinary group of scholars at Ladoke Akintola University Technology (LAUTECH), Ogbomoso, which was formed on 4 September, 2014 to advance research in nanotechnology. The group organized the maiden edition of her workshop (LAUTECH NANO 2017) on 'Synthesis, characterization and applications of nanoparticles' on 21-24 August 2017 which attracted participants from institutions of higher learning, research institutes, agencies of government and private sectors.

In furtherance of the pursuit of her cardinal objectives, the group organized her 2nd annual workshop/conference on nanotechnology tagged 'LAUTECH NANO 2018' on 23-25 October, 2018. The conference with the theme '**Nanotechnology for sustainable development: prospects for Africa**' drew more than one hundred scholars, policy makers, including the representative of the honourable Minister of Science and Technology, Dr Ogbonnaya Onu and participants from about thirty-five institutions and agencies in Nigeria. While seventy-two postgraduate students and early career scientists attended the one-day workshop on synthesis, characterization and applications of nanoparticles on 23 October, 2018, about sixty papers were presented at the conference (24-25 October 2018) in diverse areas of agriculture, science, engineering and medical fields that can engender development in Africa

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through the multidisciplinary field of nanotechnology. The opening ceremony held on 24 October 2018 drew large audience from the academia and members of the public that included about 100 students of a primary and five secondary schools. Some of the papers presented at the LAUTECH NANO 2018 conference were published in the special edition (volume 23) of *Science Focus*, the flagship journal of the Faculty of Pure and Applied Sciences, LAUTECH, Ogbomosho.

Still moving ahead on domesticating nanotechnology on the African continent and harvesting the gains from the 2nd edition of the workshop/conference on nanotechnology, the LAUTECH Nanotechnology research group organized the 3rd annual workshop/conference on nanotechnology titled ‘**Nanotechnology Applications in Africa: Opportunities and constraints**’ on 22-24 October, 2019. The conference was attended by over one hundred and fifty participants from about forty-five institutions including scholars, policy makers, students, representatives from the ministry of science and technology led by the Chairman of the national steering committee on nanotechnology policy and development, Mr. Akinyemi O. Oyefeso, and the honorable minister of science and technology who was represented by Dr. Kelechi Ebisike. Over ninety people attended the workshop while ninety-two abstracts were submitted for the plenary session of the conference. The opening ceremony held on 23 October, 2019 drew large audience from the academia and members of the public that included about 200 hundred students from primary and secondary schools. It was chaired by the Vice-chancellor, Prof. Michael O. Ologunde, with the presence of seasoned academics including the renowned scholar, Prof. Omotoye Olorode and the former President of Ibadan chambers of commerce and industry, Asiwaju Olaitan Alabi.

Lectures were delivered by the keynote speaker, Prof. AbdulKareem A. Saka, the guest speaker, Dr. Elias E. Elemike and Director, Chemical Technology/Chairman, national steering committee on nanotechnology policy and development, Mr. Akinyemi O. Oyefeso. Earlier, the group organized essay competition among students of some secondary schools on ‘**Nanotechnology for developmental change in Nigeria**’ on 16 October, 2019. The winners of the competition were honoured at the event that saw LAUTECH International College, Federal Government, and Zoe College all in Ogbomosho coming first, second and third respectively. The organization of the essay competition on nanotechnology and invitation of students of secondary schools to the opening ceremony of the

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conference elicited positive reactions and commendation from the participants and the audience at the conference. The five-year celebration of the group was also marked with the cutting of cake on which is inscribed a caption ‘**science, impact, innovation**’ representing the focus of the group.

Highlights of lectures by the guests

Mr. Akinyemi O. Oyefeso, Director of Chemical Technology, Federal Ministry of Science and Technology, and Chairman, National Steering Committee on Nanotechnology Policy and Development in Nigeria.

He presented papers on the efforts of the ministry of Science and Technology through the national steering committee on nanotechnology at developing a framework for policy document on nanotechnology R&D in Nigeria. He assured that the draft policy is being taken through the due process to ensure its speedy consideration by the Federal government of Nigeria.

Asiwaju Olaitan Alabi, Former President of Ibadan Chambers of Commerce and Industries.

In his goodwill message, he encouraged researchers, particularly the nanotechnology research group at LAUTECH to prioritize her investigations and develop products that can solve some of the problems confronting the nation. He called for tripartite synergy among the academic, the government agencies and the private sector to ensure value for the knowledge being generated in the Nigerian Universities. He felicitated and commended the activities of the research group, noting that in the nearest future, he would be delighted to read about products developed from the activities of the group.

Prof. AbdulKareem Ambali Saka, Department of Chemical Engineering and head, Nanotechnology research group, Federal University of Technology, Minna.

The keynote speaker in his lecture titled ‘**Nanotechnology as a tool of developmental change in Nigeria**’ surveyed the applications of nanotechnology with relevance to some of the challenging areas in Nigeria, such as healthcare, portable water, agriculture and food safety, national security and energy. He projected that there are lots of benefits that the country can derive from investment in nanotechnology R&D. However, he identified the challenges in nanotechnology development in Nigeria, which included lack of policy, poor funding, dearth of human capital and expertise and lack of sophisticated equipment

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for research. He advocated for the establishment of centre of excellence in nanotechnology in Nigeria, and prioritization of nanotechnology research for funding by TETFund.

Dr. Elias E. Elemike, Department of Chemistry, Federal University of Petroleum Resources, Effurun, Delta state.

In his presentation titled ‘**The small and smart technology: what future does it hold for us?**’ gave an overview of account of applications of nanotechnology in every facet of human endeavours with the affirmation that the smart technology is worthy of being pursued with vigour for national development. He identified several areas that might be of interest to various researches. He advocated for multidisciplinary approach to the study of nanotechnology, and encouraged young scholars to be steadfast in their researches and reach out to other researchers through networking for their professional development.

At the end of the 3-day workshop/conference, the participants agreed that:

1. Sub-Saharan Africa region especially Nigeria should key into nanotechnology initiatives as a strategy towards improving her socio-economic development and the transformation of important sectors. The conference underscored the need for the prioritization of funding of nanotechnology research by TETFund and other funding agencies. Specifically, the federal ministry of science and technology was advised to replicate the initiative of the department of science and technology of South Africa by funding nanotechnology research in its budget, while private sector players are also called upon to invest in the funding of researches.
2. Though Nigeria ranks next to South Africa in the contribution to knowledge in nanotechnology, but more efforts should be directed at developing nano-based products for different applications. Nigeria was tasked to prioritize applications of nanotechnology in agriculture, provision of clean water, pollution control and remediation, healthcare, and renewable energy.
3. The development of the national policy on nanotechnology research and development being coordinated by the ministry of science and technology through the national steering committee on nanotechnology should be fast tracked for passage and implementation in view of the rapid developments in the field of nanotechnology.

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4. The safety evaluation of engineered nanomaterials should be explored for studies in our institutions, in the emerging sub-field of nanotoxicity and nanotoxicology with the view of evolving means of mitigating the possible negative impacts of nanomaterials in the environment.
5. Centre of excellence should be established in the six geopolitical zones to reduce the frustration being experienced by students and researchers due to lack of equipment to conduct the characterizations necessary for nanomaterials.
6. Synergy should be established between the universities, industries and the government to turn output from nanotechnology researches into products that can be commercialized. This is necessary and urgent to avoid turning Africa into a dumping ground for finished nanotechnology products from other continents.
7. LAUTECH Nanotechnology Research group (*NANO*⁺) (www.nanotech.lautech.edu.ng) deserves more supports from all and sundry to impact their experience more on the society. In fact, it was canvassed that a centre of excellence in nanotechnology should be established in LAUTECH to facilitate nanotechnology researches and leveraging on the group's achievements for five years.
8. The workshop/conference organized by LAUTECH Nanotechnology research group was a step in the right direction at training participants and creating a platform for national discourse on nanotechnology. The workshop/conference was deemed highly impactful as it created awareness on nanotechnology research in Nigeria.

Prof. A. Lateef



Head of Research Group

Dr. M.A. Azeez



Chairman, LOC, 'LAUTECH NANO 2019'

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