

REPORT ON THE THIRD WASEND SYMPOSIUM



The West Africa Sustainable Engineering Network for Development (WASEND) held its 3rd Symposium on Friday, 29th April 2022 from 12:00pm - 5:00pm (GMT) via zoom on the theme "Renewable Energy Integration: Successes, Challenges and Research Opportunities".

Fifty-Six (56) participants joined the third symposium hosted by College of Engineering, KNUST in Ghana.

The aim of the symposium was to equip WASEND members with knowledge in renewable energy integration and also to give the opportunity to postgraduate students to present their research outcomes for comments and inputs from faculty members and industrial players present at the symposium.

Participating ACEs (African Centers of Excellence) were:

- College of Engineering, Kwame Nkrumah University of Science and Technology (KNUST).
- International Institute of Water and Environmental Engineering (2IE), Burkina Faso
- University of Science, Engineering and Technology, Gambia
- College of Engineering, University of Abomey Calavi, Benin

The Guest Speaker was Dr. Richard Opoku, a Senior Lecturer at the Department of Mechanical Engineering, KNUST. He is a certified Sustainable Energy Management Professional and an Energy Consultant with experience in research and development. He also has over 10 years' experience in capacity building and training of facility managers on energy efficiency and renewable energy. His presentation covered the sources of electricity generations and emissions, Electricity Portfolio in Africa, Electricity Access in West Africa,

Electricity Generation Mix in West Africa. Renewable Energy Policy in West Africa, Challenges of Renewable Energy Electricity Supply in West Africa and Research Opportunities available.

Please click <https://docs.google.com/presentation/d/1CIWpdfJd6774yXkQ10-P-liB4EYnArKH/edit?usp=sharing&ouid=100843132195621956409&rtopf=true&sd=true> to view the presentation.

Nine (9) postgraduate students under the various Colleges of Engineering gave presentations on the underlisted topics:

1. Estimation of GHG emissions using a sensor approach: The case of Suame Industrial Complex (Ibrahim Hamidu)
2. Optimal production site of a photovoltaic energy source exposed to climatic conditions using a GIS: case of the plateau department of Benin. (Jules Gnagbolou)
3. Pr evision par l'intelligence artificielle de la variabilit e de la puissance de sortie d'un g en erateur photovolta ique install e sur le territoire B eninois / Prediction by artificial intelligence of the variability of the output power of a photovoltaic generator installed on the Beninese territory (Audace Babatounde)
4. Modelisation Physique D'une Voilure A Axe Verticale Pour La Production D'energie Eolienne / Physical Modeling of a Vertical Axis Airfoil for Wind Power Generation (Ibrahim Lopez)
5. Effet du rayonnement et du champ magn etique dans le processus de la diffusion des contaminants   travers le sol, canal poreux horizontal / Effect of radiation and magnetic field in the process of diffusion of contaminants through soil, horizontal porous channel (Issiako Faras)
6. Analyzing The Effect of Spiral Distribution System of the Heliostat Field Layout with Optimized Dual Axis Solar Tracking System on the Performance of Concentrating Solar Power Tower. (Acheampong Kwarteng Joseph)
7. Techno-Economic Assessment of The Viability of Commercial Solar PV Systems in Port Harcourt, Nigeria (Muzan William)
8. A study of energy improvement through solar PV and tracking system. (Rahimat Oyiza Yakubu)
9. Investigating activated carbon/grapheneoxide/TiO₂ composite electrode material for high performance supercapacitors (Fuseini Abdallah)

Dr. Chux Daniels, a member of the WASEND Network Advisory Board and Dr. Victor Ayisi Atiemo-Obeng, a member of the KNUST Engineering Education Project (KEEP) Industrial Advisory Board joined the symposium to give their inputs and comments on the various presentations.

The Network Coordinator for WASEND, Prof. Jerry John Kponyo in his closing remarks thanked all presenters for their insightful presentations. He mentioned that engagement after each presentation in terms of questions asked was not forthcoming as expected. He recommended that a team of experts should analyse the topics submitted for presentation before the symposium

session and should be present at the symposium to engage with presenters with their inputs and feedback for a maximum impact. He thanked the Advisory Board members who took time off their busy schedules to be part of the symposium, participants from the Association of African Universities and the translation team for their translation services.

REGISTRATION

A link to a google form was circulated for registration of participants for the symposium. It included questions on name, gender, email, institution and designation of participants.

Forty-four (44) people responded to the questions in the registration form. Below are chart results on gender, institution and designation of participants.

GENDER

Gender
44 responses

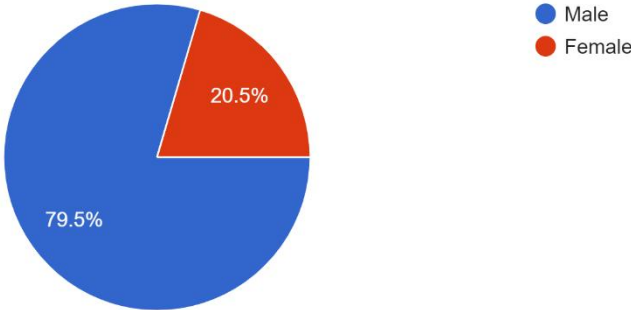


Figure 1 Chart results on gender of participants

In figure 1 above, thirty-five (35) males, representing 79.5% registered for the symposium while nine (9) females, representing 20.5% registered.

INSTITUTION

Institution

44 responses

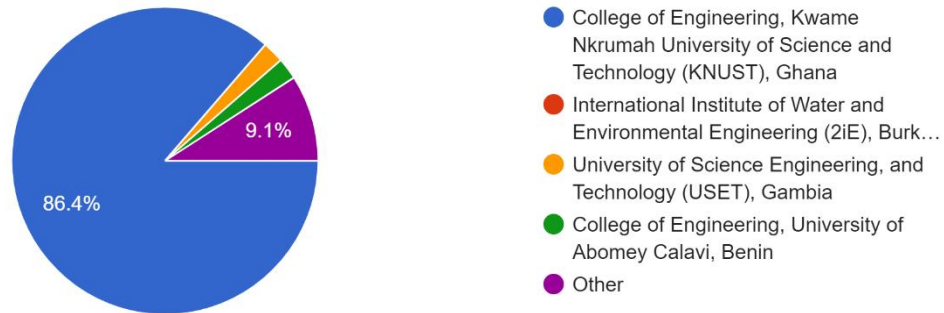


Figure 2 Chart results on institution of participants.

In figure 2 above, thirty-eight (38) people registered from College of Engineering, Kwame Nkrumah University of Science and Technology (KNUST) representing 86.4%. No one registered from International Institute of Water and Environmental Engineering (2IE), Burkina Faso. One (1) person registered from University of Science, Engineering and Technology, Gambia representing 2.3% as well as one (1) person registering from College of Engineering, University of Abomey Calavi, Benin also representing 2.3%. Four (4) people registered as “other” (one from University of Ibadan, Nigeria, one from CSIR-Building and Road Research Institute, the other a Mechanical engineer, National water and electricity company, Gambia and the other an alumni of KNUST) representing 9.1% of the total responses.

DESIGNATION

Designation
44 responses

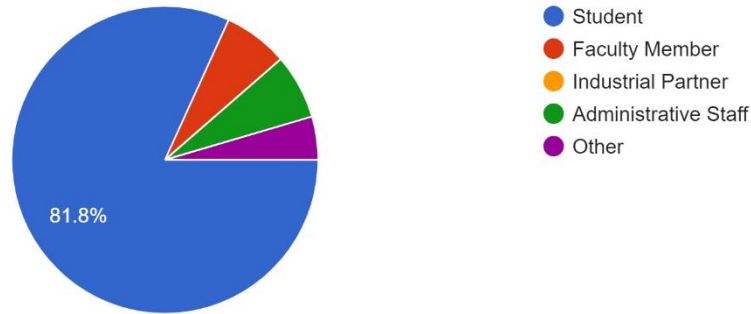


Figure 3 Chart results on designation of participants

In figure 3 above, thirty-six (36) people registered as students representing 81.8%. Three (3) people registered as faculty members representing 6.8% as well as three (3) people registering as Administrative Staff also representing 6.8%. Two (2) people registered as “other” (one of which is Bioenergy research scientist) representing 4.5% of the total responses.

APPENDIX

WASEND SYMPOSIUM (SYM)

THEME:
Renewable energy integration: Successes, Challenges and Research Opportunities

GUEST SPEAKER
Dr. RICHARD OPOKU

ABSTRACT DETAIL:

- Abstract can cover any topic area within the thematic areas of **WASEND** participating institutions/ACE centers
- Maximum number of words 150
- Must be E-mailed to keep@knust.edu.gh

SUBMISSION OF ABSTRACT (DEADLINE)
SUNDAY, 24th APRIL 2022

Friday, 29th April 2022
12:00pm - 5:00pm (GMT)

wasend.org [WASEND](https://twitter.com/WASEND) [WASEND](https://www.facebook.com/WASEND) West Africa Sustainable Engineering Network for Development

