



WASEND NEWSLETTER

WELCOME MESSAGE

I am excited to welcome you to the second edition of the WASEND Newsletter. This edition captures the maiden WASEND seminar, the second WASEND academic exchange programme, the third WASEND symposium, the visit of the WASEND Advisory Board Chairman to 2iE and the visit of the Network Coordinator to the Royal Academy of Engineering in UK.

WASEND is made up of four World Bank-designated African Centres of Excellence (ACEs) in Engineering, namely:

- College of Engineering, Kwame Nkrumah University of Science and Technology (KNUST), Ghana
- International Institute of Water and Environmental Engineering (2iE), Burkina Faso
- University of Science Engineering, and Technology (USET), Gambia (an Emerging ACE), and
- College of Engineering, Université D'abomey - Calavi (EIE), Benin

NB: The Gambia Technical Training Institute (GTTI) and University of Science Engineering and Technology (USET), Gambia are currently co-located and share many resources.

The rationale of WASEND is to enhance the contribution of individual ACEs to the knowledge economy by building synergies among them and encouraging peer learning through active partnerships. Active partnerships are critical for strengthening innovation to support accelerating scientific research activities and enhance the interlinkages between specialised research centres across ACE Institutions. The focal areas of the network are energy and digital development.



Prof. Jerry John Kponyo
(Network Coordinator)

The network is made up of activities such as symposia, seminars, capacity-building workshops, impact projects, and academic exchange programmes.

We welcome contributions and suggestions from stakeholders and readers to help improve the Newsletter. Please send contributions and suggestions to wasend@knust.edu.gh.

Welcome once again!

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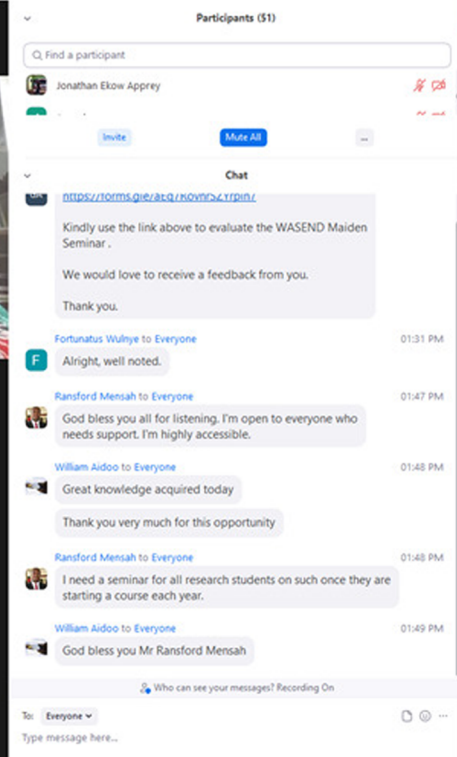
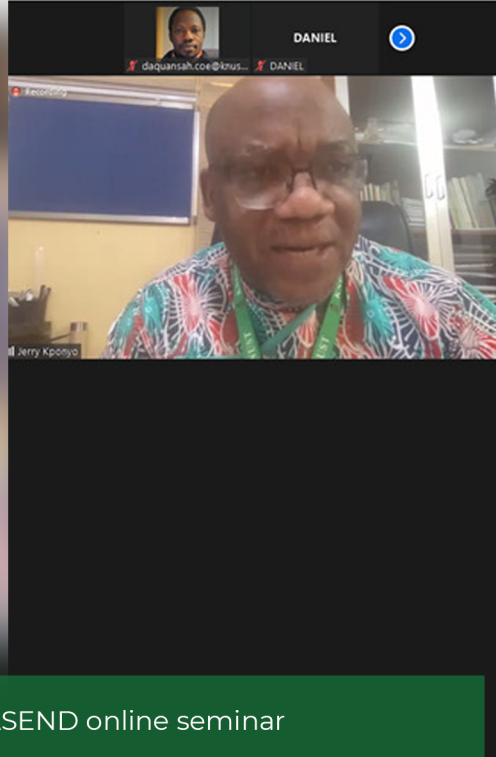


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COLLEGE OF ENGINEERING, KNUST HOSTS WASEND MAIDEN SEMINAR

The maiden WASEND seminar was held with the theme "The Role of Research in Entrepreneurship and Business Ideas Development" on Friday, 11th February 2022 from 12:00 pm - 2:00 pm (GMT) online. The seminar aimed to equip WASEND members with knowledge in business idea development and the tools necessary to transition from research ideas and concepts to start-ups and businesses. This is expected to make a meaningful contribution to the economy of the sub-region.

Participating in the seminar were Ing Asare Yeboah, Industrial Advisory Board Chairman for KNUST Engineering Education Project (KEEP), Prof. Jerry John Kponyo, Network Coordinator, WASEND, students from the four WASEND ACE centres and faculty members. Fifty-One (51) participants joined the maiden seminar.

Mr. Ransford Mensah, the resource person for the seminar is an alumnus of the College of Engineering, KNUST where he studied BSc Electrical and Electronics Engineering. He is also the CEO of Hover Consult.

He spoke on the traits of an entrepreneur, the stages in the development of ideas as an entrepreneur, the need for research in entrepreneurship, business model conceptualization, competition analysis and growth strategy.

He stated that research makes an entrepreneur confident and gives him the power to communicate effectively to an audience. "One has the ability to see the future today through in-depth research and idea development. The research draws the right lines between the start, growth and end of a business and gives the ability to promote a non-existent product even before it is birth, based on the insight gathered in the research process, he concluded.

Participants asked questions on the challenges of capital mobilization and how to acquire a patent for commercialized research works. Mr. Ransford Mensah used the online ride applications' operations to explain that a company can thrive on technology and not intensive capital.

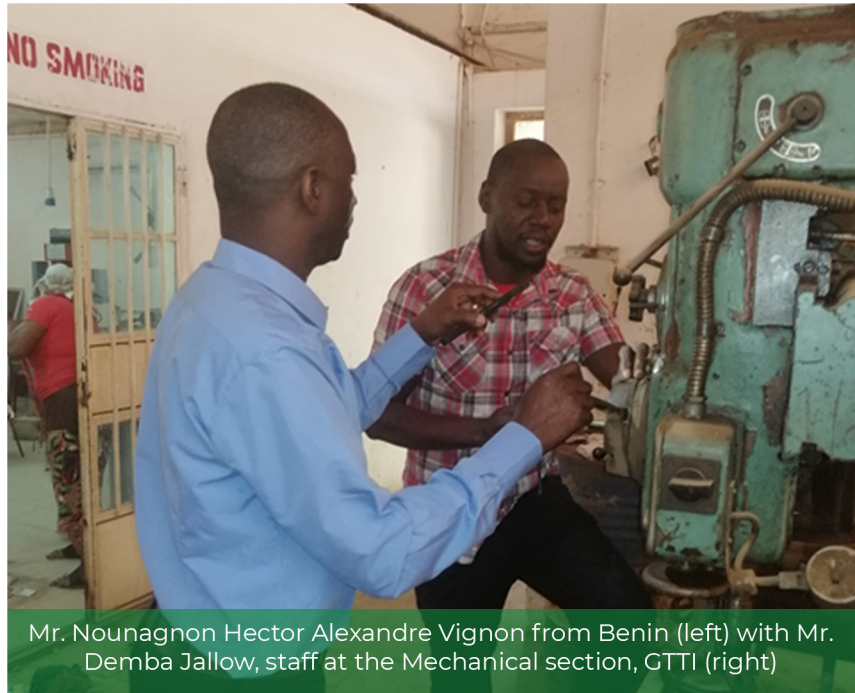
Ing Asare Yeboah commended Mr. Ransford Mensah for an insightful presentation and said he is impressed with the organization of the seminar.

Prof. Jerry John Kponyo in his closing remarks stated that the various centres will take steps to implement and commercialize research works. He added that the College of Engineering in KNUST has introduced a final year course in Entrepreneurship and Management to help with the commercialization of research and business ideas.

UNIVERSITY OF APPLIED SCIENCE, ENGINEERING AND TECHNOLOGY. (USET) HOSTS SECOND WASEND ACADEMIC EXCHANGE PROGRAMME

University of Applied Science, Engineering and Technology (USET) hosted the second academic exchange programme from 28th February 2022 to 4th March 2022 in Gambia. The exchange included technicians and academic staff who visited the institution to explore avenues for collaboration and to study laboratory and workshop equipment for student training

Participating in the exchange were Prof. Kokouvi Edem N'TSOUKPOE from the International Institute of Water and Environmental Engineering (2iE), Burkina Faso, Mr. Robert KYERE from College of Engineering, KNUST, Mr. Hector Alexandre Vignon NOUNAGNON from the College of Engineering, Université D'abomey – Calavi, Benin.



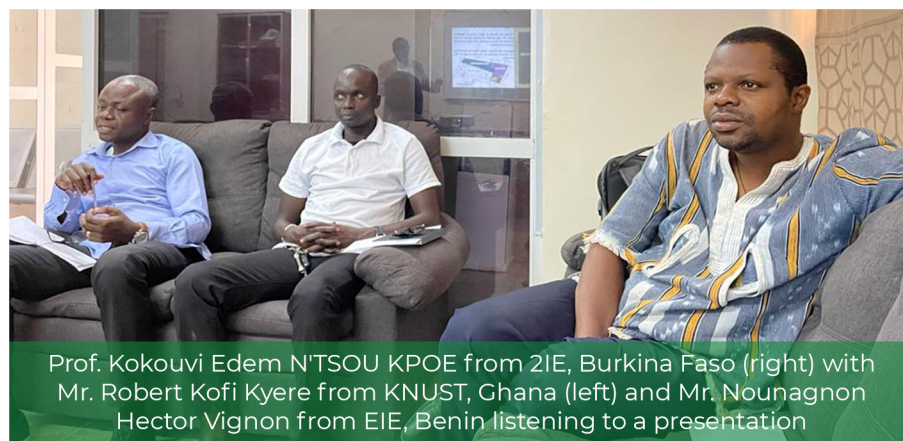
Mr. Nounagnon Hector Alexandre Vignon from Benin (left) with Mr. Demba Jallow, staff at the Mechanical section, GTTI (right)



Mr. Sadou Jallow, Lecturer and Head of the welding section, GTTI (seated) with Mr. Robert Kofi Kyere from KNUST

Participants visited the automobile engineering, welding and fabrication, carpentry/joinery workshops and the electrical and electronic engineering laboratories.

Presentations were also made by the visiting team to students on internal combustion engines, the basic characteristics of combustion chamber designs and identification of the various components of an engine as well as the principle of operation of 4 stroke cycle. The team also took the opportunity to fix some faulty machinery during the exchange programme.



Prof. Kokouvi Edem N'TSOU KPOE from 2iE, Burkina Faso (right) with Mr. Robert Kofi Kyere from KNUST, Ghana (left) and Mr. Nounagnon Hector Vignon from EIE, Benin listening to a presentation

COLLEGE OF ENGINEERING, KNUST HOSTS THE THIRD WASEND SYMPOSIUM

The 3rd WASEND Symposium was hosted by College of Engineering, KNUST in Ghana on 29th April 2022 online. The theme of the symposium was "Renewable Energy Integration: Successes, Challenges and Research Opportunities".

Participants included Dr. Chux Daniels, WASEND Advisory Board member, Dr. Victor Ayisi Atiemo-Obeng, KEEP Industrial Advisory Board member, Prof. Jerry John Kponyo, WASEND Network Coordinator, students from the four WASEND ACE centres and faculty members. Fifty-One (51) participants joined the maiden seminar.

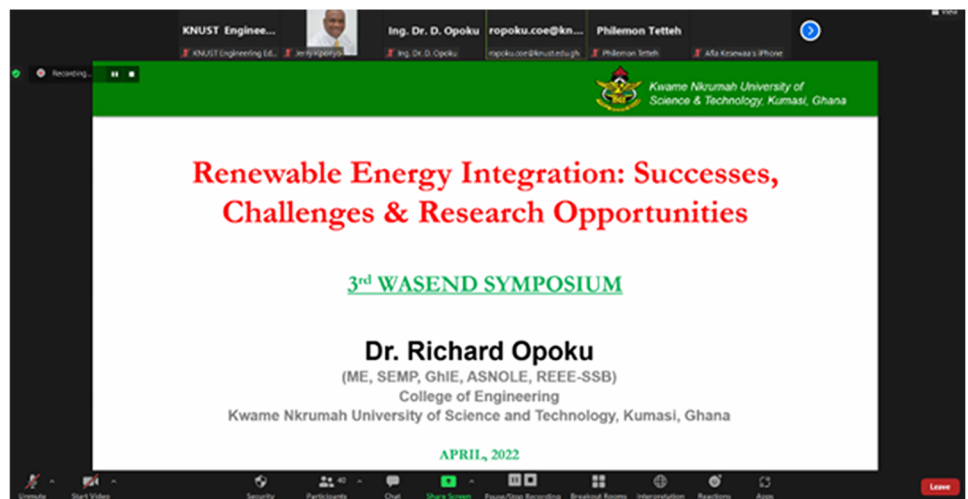
The aim of the symposium was to equip WASEND members with knowledge in renewable energy integration and also to give the opportunity to postgraduate students to present their research

outcomes for comments and inputs from faculty members and industrial players present at the symposium.

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 of experience in capacity building and training of facility managers on energy efficiency and renewable energy.

His presentation included the sources of electricity generation and emissions, electricity portfolio in Africa, electricity access in West Africa, and electricity generation mix in West Africa among others.



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

- Estimation of GHG emissions using a sensor approach: The case of Suame Industrial Complex (Ibrahim Hamidu)
- Optimal production site of a photovoltaic energy source exposed to climatic conditions using a GIS: the case of the plateau department of Benin (Jules Gnagbolou)
- Prediction by artificial intelligence of the variability of the output power of a photovoltaic generator installed on the Beninese territory (Audace Babatounde)
- Physical Modeling of a Vertical Axis Airfoil for Wind Power Generation (Ibrahim Lopez)
- Effect of radiation and magnetic field in the process of diffusion of contaminants through the soil, horizontal porous channel (Issiako Faras)
- Analyzing The Effect of the Spiral Distribution System of the Heliostat Field Layout with an Optimized Dual Axis Solar Tracking System on the Performance of Concentrating Solar Power Tower (Acheampong Kwarteng Joseph)
- Techno-Economic Assessment of The Viability of Commercial Solar PV Systems in Port Harcourt, Nigeria (Muzan William)
- A study of energy improvement through solar PV and tracking system (Rahimat Oyiza Yakubu)
- Investigating activated carbon/grapheneoxide/TiO₂ composite electrode material for high-performance supercapacitors (Fuseini Abdallah)

Dr. Chux Daniels and Dr. Victor Ayisi Atiemo-Obeng gave their inputs and comments on the various presentations.

Prof. Jerry John Kponyo in his closing remarks thanked all presenters for their insightful presentations. 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.



From left: Dr. Marie SAWADOGO, Mr. Saidou DIAWARA, Mr. Amarquaye Armar, Prof. Harouna KARAMBIRI, Prof. K. Edem N'TSOUKPOE and Léa FULLOY

WASEND ADVISORY BOARD CHAIRMAN VISITS 2iE, BURKINA FASO

Chairman of WASEND Advisory Board and Chairman of the First Atlantic Bank, Mr. Amarquaye Armar visited the 2iE Campus in Kamboinsé on June 21 2022 to meet with the training and research team leads in the renewable energies section of the 2iE Institute.

Mr. Armar was accompanied by Mr. Saidou Diawara, co-founder and former Managing Director of Faso Energy, a photovoltaic module assembly industry in Burkina Faso.

The meeting was chaired by Prof. Harouna Karambiri, Director of Research at 2iE, with Prof. K. Edem N'Tsoukpoé, Coordinator of the 2iE College of Engineering (CoE-2iE), Dr. Marie Sawadogo, Head of the Renewable Energies and Energy Efficiency Laboratory (LabEREE) and Léa Fulloy, Agricultural Research Centre for International Development (CIRAD) present.

Mr. Karambiri gave a presentation on 2iE which was followed by a brief presentation on the CoE-2iE by Prof. N'Tsoukpoé.

Participants discussed concrete actions which are feasible for the Colleges of Engineering to implement and improve impact. Mr. Armar suggested that WASEND plays a bigger role in the launch of the West African Power Pool (WAPP) by partnering with Faso Energy to offer training

programs, research and high-quality services to public or private institutions in the West African sub-region. "A unifying project, which will involve the WASEND Colleges of Engineering, WAPP and private players in the field of renewable energies, is currently being prepared, he stated.

Mr. Armar promised to organize a return visit to 2iE's infrastructures and laboratories in the field of energy and civil engineering.



The discussions took place in an atmosphere marked by great cordiality.

WASEND NETWORK COORDINATOR VISITS THE ROYAL ACADEMY OF ENGINEERING (RAE) IN THE UK



Prof. Jerry John Kponyo, the WASEND Network Coordinator visited the Royal Academy of Engineering (RAE) on 4th July 2022. The aim of the visit was to explore ways in which WASEND and RAE can work together to improve the quality of engineering education in sub-Saharan Africa and identify areas where the two can collaborate to solve the research problems relevant to the African setting.

Prof. Kponyo gave a presentation on WASEND. He covered areas such as:

- A brief about KNUST
- Vision of WASEND, budget and participating institutions
- Network Activities and Workplan which includes seminars, symposia, academic exchange activities, joint resource mobilization, joint research publications, joint research coordination
- Organogram of the network
- Sustainability measures
- Areas of collaboration between WASEND and RAE

Discussions were held after the presentation and the following steps were agreed to be worked on:

- WASEND will work on a call which will be coming up in the course of next month
- RAE will collaborate with WASEND during its network activities such as seminars and symposia and will get in touch with experts who can be very useful resource persons.



Overview of WASEND online seminar

ONLINE SECURITY TIPS!

PROTECT YOUR ONLINE PRIVACY

- Avoid sensitive transactions on public Wi-Fi
- Don't forget to sign out
- Use secure websites, especially for sensitive transactions
- Don't download files from untrustworthy websites
- Don't save passwords in your browser
- Store your most sensitive data locally

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Meet Our Team

Our 2IE Team



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Adamah Messan
(Research Coordinator)



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Our EIE Team



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