



**KNUST**  
Kwame Nkrumah  
University of Science  
and Technology, Kumasi



**CoE**  
College of  
Engineering

ISSUE 005 | FEBRUARY 2024

# ENGINEERING Briefs

ELECTRONIC BULLETIN OF THE COLLEGE  
OF ENGINEERING, KNUST

PROVIDING MONTHLY HIGHLIGHTS OF ACTIVITIES AT THE COLLEGE OF ENGINEERING



**Commissioning of the Integrated Training  
Centre for Applied Mechanical and Medical  
Engineering**



**College of Engineering Launches Innovation  
Centre to Foster Entrepreneurship and  
Research Excellence**



## 2024 COLLEGE FRESHMEN ORIENTATION

The College of Engineering (CoE) at the Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, organised an orientation for its first-year students on 9th January 2024 at the Kumapley Auditorium to officially welcome freshmen to the 2023/2024 Academic Year. The orientation sought to provide students with the necessary information to ensure a seamless academic journey on campus.



The program was graced by the Provost of the College of Engineering, Prof. Kwabena Biritwum Nyarko, the Deans of the three Faculties, Heads of the various Departments, Faculty members and administrative staff of the College.

Students were introduced to the “University Rules and Regulations (Discipline and Misconduct)” and guidelines for a positive university experience. They were advised to optimise the use of the college library and urged to visit the library frequently.

The college counselling unit together with the various departments enlightened students on the functions of their offices through video presentations.

[WATCH VIDEO HERE](#)



## 01 | ACADEMICS

### The 2023/2024 Academic Year Begins

In an exciting return to academic life, the prestigious College of Engineering, KNUST ushered in the 2023/2024 academic year. The College received its freshman cohort on January 6, 2024, followed by the return of continuing students on January 13, 2024.

The editorial team of the CoE newsletter warmly extends its greetings to both new and returning students and staff. As part of vibrant re-entry activities students and staff were engaged in a discussion as they moved through the College.

During the interview, participants shared their thoughts on the upcoming semester, articulating their hopes and aspirations for the academic year. For those eager to catch a glimpse of this inspiring dialogue, the video of the interview has been thoughtfully curated and made available on YouTube.





## 02 | RESEARCH COLLABORATIONS

### Commissioning of the Integrated Training Centre for Applied Mechanical and Medical Engineering

The Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, in partnership with the Technical University of Munich (TUM), Adama Science and Technology University, Ethiopia and the German Embassy in Ghana, has officially inaugurated the Integrated Training Centre (ITC) for Applied Mechanical and Medical Engineering at the KNUST College of Engineering (CoE).

The Principal Investigator (PI) of the Project, Dr. Joshua Ampofo, stated that the Centre will serve as a platform for academic and technical exchanges in medical engineering between Ghana, Germany, and Ethiopia. He added that it will focus on teaching and training in the usage of assistive devices and Circular Medical Plastic Engineering (CIMPLE). Dr. Ampofo revealed that the Centre is financed by the Federal Ministry of Education and Research and administered by the German Academic Exchange Service (DAAD).



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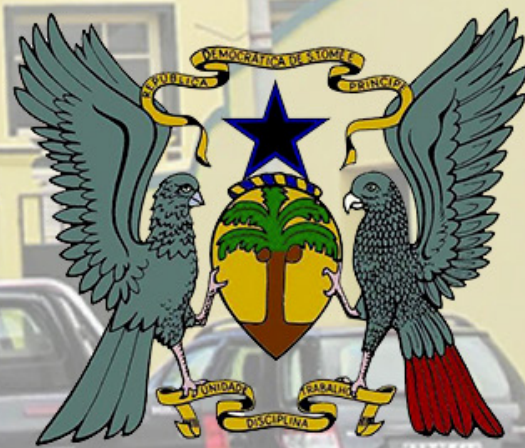


## African Centre of Excellence in Internet of Things (ACEIoT), Rwandan Team Pay a Working Visit to KEEP to Strengthen Collaboration

The KNUST ENGINEERING EDUCATION PROJECT (KEEP), at KNUST seeks to deliver high quality postgraduate courses, conduct and disseminate applied research focused on addressing development challenges related to industrialization, digital development (ICT), energy systems, renewable energy, manufacturing, exploration and development of the oil and gas industry. Prof. Damien Hanyurwimfura, Principal Investigator, Mrs. Beline Mukarwego, Monitoring and Evaluation Officer and Mrs. Butoyi Husna, Industry Liaison Officer from the African Center of Excellence in Internet of Things (ACEIoT), University of Rwanda, paid a working visit to the KNUST Engineering Education Project (KEEP) from 8th to 10th January 2024.



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## 03 | **INDUSTRY & ACADEMIA**

### KNUST Supports the Government of São Tomé and Príncipe to Develop Low-Emissions Transport and Electric Mobility Plans

The Kwame Nkrumah University of Science and Technology (KNUST), Kumasi has been engaged by the United Nations Development Organisation (UNIDO) to assist the Government of São Tomé and Príncipe (STP) to develop a low carbon emissions plan for the country's Transport Sector.

The agreement, signed by Professor (Mrs.) Rita Akosua Dickson, Vice Chancellor of KNUST, and Atushi Isoyama a representative of UNIDO, will enable experts at The Brew-Hammond Energy Centre of the College of Engineering, KNUST to work with various stakeholders at STP over ten (10) months. The assignment will be jointly implemented with pManifold Ltd of India.



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## 04 | INNOVATIONS

### College of Engineering Launches Innovation Centre to Foster Entrepreneurship and Research Excellence

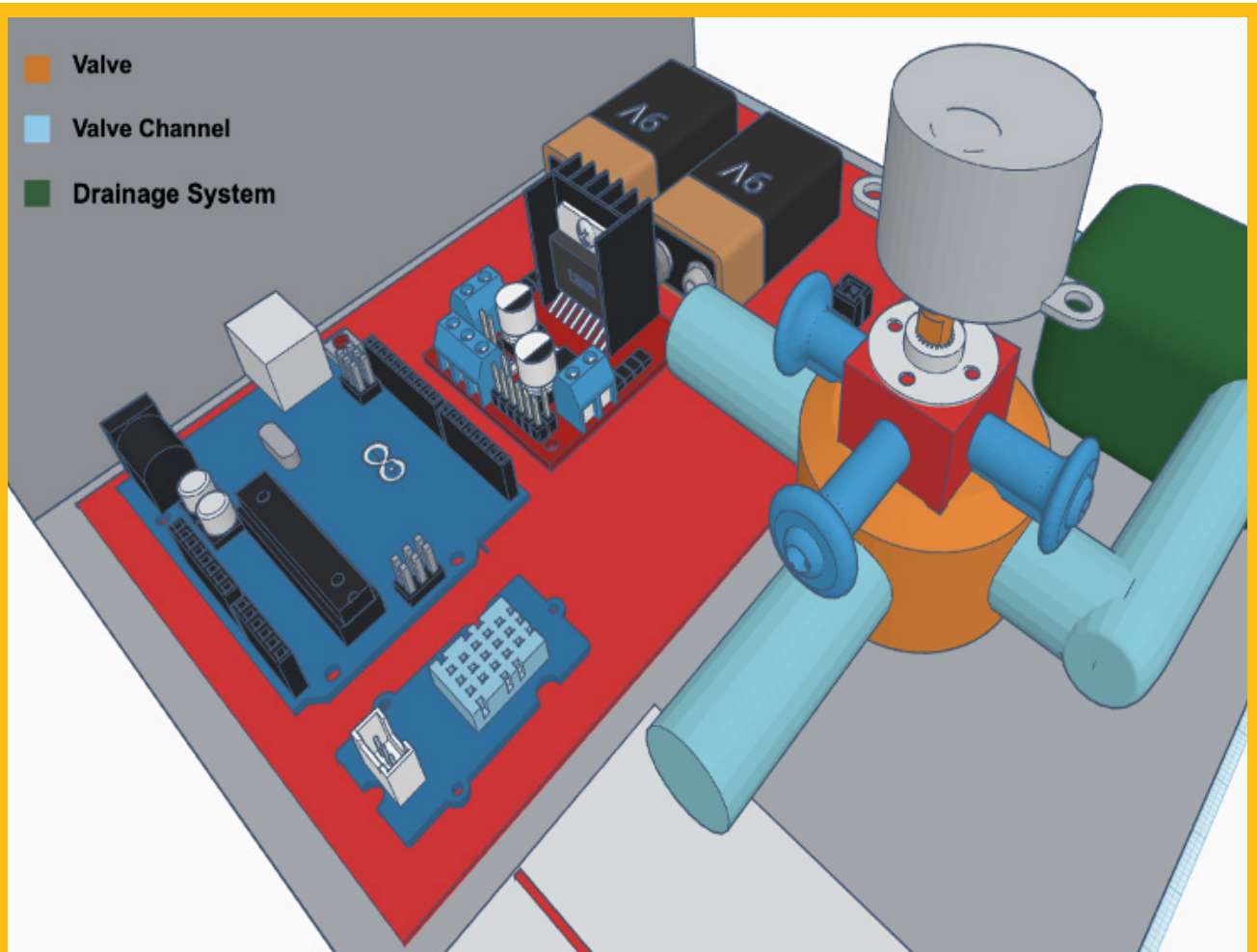
The College of Engineering has launched its Innovation Centre to foster innovation, entrepreneurship, and research excellence among students and staff.

The Provost of the College, Professor Kwabena Biritwum Nyarko, highlighted the significance of the Centre as a milestone in the College's journey to advance knowledge in innovation and entrepreneurship.

He stated that KNUST continues to play an exceptional role in nurturing top engineers for Ghana and the world at large. He noted that the multifaceted approach of the engineering curriculum is designed to enable students to thrive in the dynamic world of work and equip them with entrepreneurial skills.



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## Automated Continuous Ambulatory Peritoneal Dialysis Device

Globally, chronic kidney diseases (CKD) are becoming alarmingly prevalent. In Ghana, the prevalence of CKD is a whopping 13.3%. Kidney failure disrupts the body's balance of electrolytes, fluids, and acid-base levels, necessitating Renal Replacement Therapy (RRT) to manage resulting metabolic imbalances. Many ESKD patients rely on dialysis, which removes excess water, solutes, and toxins from the blood. Peritoneal dialysis is a well-established treatment for people with end-stage renal disease (ESRD).

Theodora Addeafi Gyambrah, Martin Kwarteng Jnr and Yeboah Benjamin Appiah, Biomedical Engineering Students with the Department of Computer Engineering have designed and built a low-cost device with a robust interface that controls the entire continuous ambulatory peritoneal dialysis setup with minimal or no human intervention.

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◀ **Dr.  
Solomon  
S.R. Gidigasu**

## **05** | **LATEST HAPPENINGS**

### Time with Dr. Solomon S.R. Gidigasu

Dr. Solomon S.R. Gidigasu is a Senior Lecturer at the Department of Geological Engineering at the College of Engineering, KNUST. His research areas are soil improvement, geomaterials characterisation and testing for construction, and rock slope stability analyses.

Dr. Gidigasu embarked on a faculty exchange programme at the Indian Institute of Technology (IIT), Madras, India. He was introduced to some aspects of computational geomechanics, specifically the application of extended finite element methods in geotechnical engineering and how to carry out dynamic/cyclic testing of geomaterials.

He interacted with staff and postgraduate students and visited their research laboratories. He also had the opportunity to deliver a seminar to the Indian Geotechnical Society, Chennai Chapter, on the topic "The extent of deterioration of a mechanically stabilised lateritic base course after design life and its implications for rehabilitation: A case study of Kumasi City Roads, Ghana".

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## Dr. Bennetta Koomson receives an Organization for Women in Science for Developing World (OWSD) Early Career Fellowships Award.

Dr. (Mrs.) Bennetta Koomson is a Senior Lecturer and consulting Engineer at the Department of Materials Engineering, KNUST, Ghana.

Dr. Koomson received an Organization for Women in Science for Developing World (OWSD) Early Career Fellowships Award worth USD 50,000 to lead research projects and establish research groups in the College of Engineering, KNUST. The funding for the fellowships is generously provided by Canada's International Development Research Centre (IDRC) to maintain an international standard of research and attract scholars from all over the world to collaborate.

Dr. Koomson's research project devises a method to manufacture new cupels- receptacles used in mining to separate metals such as gold and silver from lead, using the residue of spent cupels after lead removal.

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◀ Prof. Emmanuel Asuming Frimpong

## 06 | STAFF IN FOCUS

Up Close with Prof. Emmanuel Asuming Frimpong, Dean of the Faculty of Electrical and Computer Engineering (FECE).

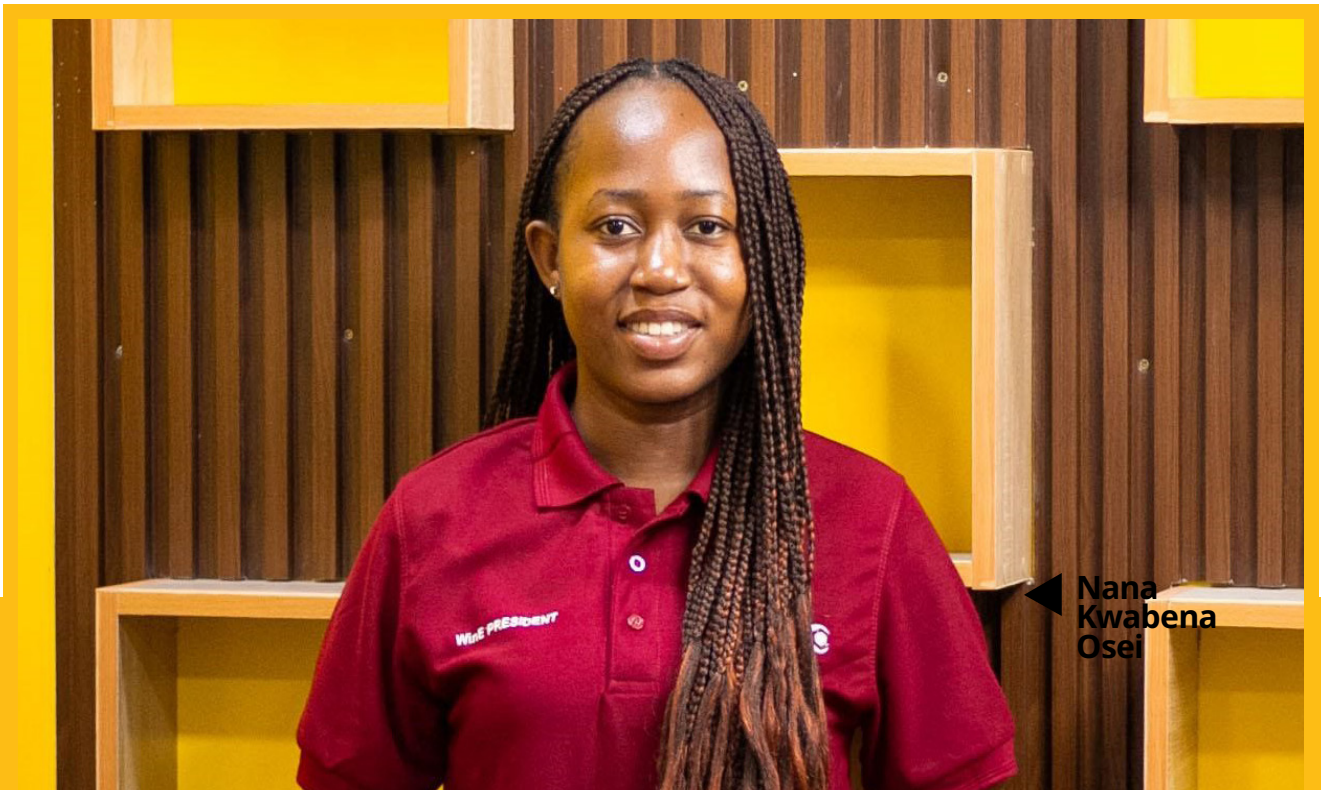
Prof. Emmanuel Asuming Frimpong is an Associate Professor at the Department of Electrical and Electronic Engineering, KNUST, Ghana. He is the Dean of the Faculty of Electrical and Computer Engineering and a certified Sustainable Energy Management Professional.

In an interview he talks about some endeavours of the faculty, one of which is the Sustainable Energy Service Centre.

The Dean of the Faculty of Electrical and Computer Engineering (FECE) envisions the Faculty in the near future will be the local brand for capacity building, research and development in the four(4) principal fields the faculty focuses on.

Prof. Frimpong believes in hard work, honesty and creating an enabling environment for research and development.





Nana Kwabena Osei

## 07 | STUDENT IN FOCUS

### Meet Josephine Nana Adwoa Asmah, KNUST WinE President

In an inspiring tale of dedication and passion, Josephine Asmah, a final-year Computer Engineering student, has become a trailblazer at KNUST. Currently serving as the Women's Commissioner for the Ghana Engineering Students Association (GESA) and the President of the Women in Engineering (WiNE) KNUST chapter, Josephine's journey began with a love for technology, resulting in an exploration of advanced programming languages. Her involvement in the SHECodes club saw impressive progress in members, from novice to proficient Arduino users, showcasing the power of collaboration and perseverance.

Josephine balances her studies and extracurricular activities through effective time management and strategic planning. Her story resonates as an inspiration to young women aspiring to pursue engineering careers, proving that dreams can be achieved through hard work and unwavering commitment.





## 08 | ALUMNI REPORT

### Prof. Collins Fosu, Department Of Geomatic Engineering, makes a Gargantuan Individual Donation

Prof Collins Fosu is an Alumnus of KNUST - CoE, where he read Geomatic engineering for his undergraduate degree in 1986. He is currently an Associate Professor at the College of Engineering.

In a generous gesture of giving back to society, Prof Collins made a cash donation of 50,000 Ghana cedis and equipment worth \$35,000 to the Department of Geomatic Engineering, CoE. He credits KNUST for positively shaping his life and aiding his journey to becoming a professor. This act of philanthropy reflects his deep appreciation for the educational foundation provided by KNUST and his commitment to supporting the Institution's initiatives for the benefit of future generations.





## CoE Alumna Makes us Proud

An Alumna of this prestigious University is not only setting the pace and leading the way in the engineering teaching space, but she has also risen to a respectable and commendable position where she finds herself.

With all her three degrees (First degree, second degree and PhD) bagged here at the College of Engineering, Prof. Abena Agyeiwaa Obiri Yeboah shares something about her journey with us. Join us in this interview with the Pro Vice Chancellor of the Kumasi Technical University.





Welcome



# ALUMNI



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# LAUGH OUT LOUD



An electrical engineer, mechanical engineer, and software engineer are on their way to a trade show when their car stalls and they are forced to pull over to the side of the road.

The mechanical engineer says, "It's probably a mechanical problem. I'll get my tool-box out of the trunk and I can fix it."

The electrical engineer says, "No, I'll bet it's an electrical problem. I have my multimeter with me and I'll go check it out."

Finally, the software engineer says, "I have the solution! Let's all get out of the car and then get back in. I'll bet we'll be back on the road in no time."

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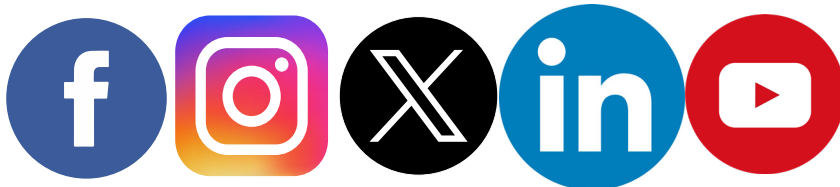


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