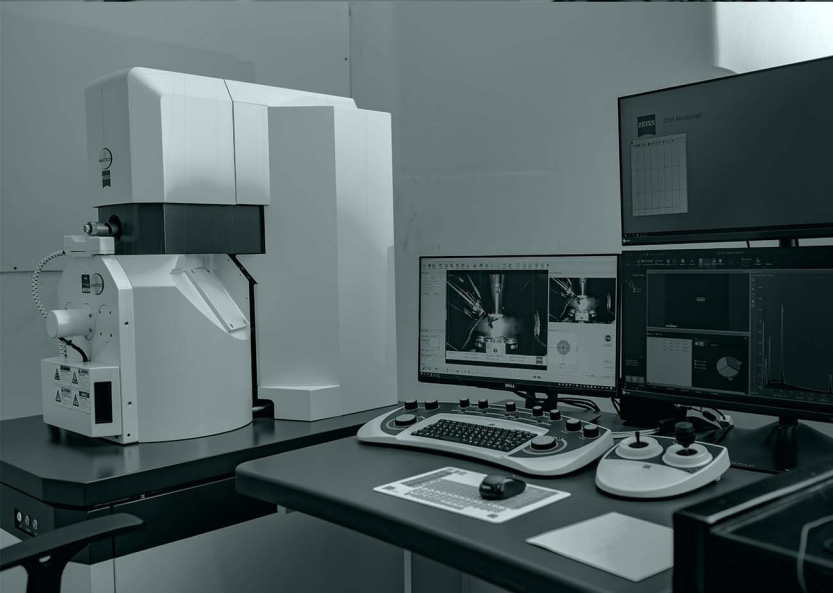
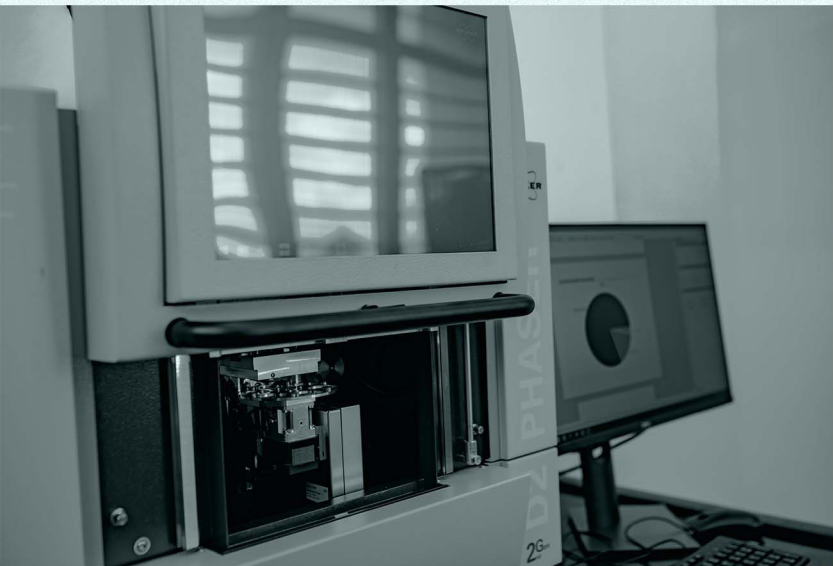


Newsletter

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Laboratory Services

RWESCK Laboratory

The laboratory facilities at the Regional Water and Environmental Sanitation Centre in Kumasi (RWESCK) serve as an experimental platform for Science and Engineering students from Kwame Nkrumah University of Science and Technology and other universities in Ghana. These facilities provide students with advanced scientific equipment, ensuring that the institution remains at the forefront of innovative scientific research. RWESCK established the laboratory for students and also utilizes its resources for commercial purposes to ensure sustainable operations after the World Bank Project.

The laboratory is divided into four main sections: the Environmental and Water Quality Labs, as well as the Water Resource and Hydraulic labs. The Environmental and Water Quality Labs house cutting-edge equipment for various laboratory and field experiments, including Material Characterisation and Water Quality testing. The material section of the lab is particularly notable for its state-of-the-art instruments, such as the X-Ray Diffractometer (XRD), Scanning Electron Microscope (SEM), Photometer, Biogas, and Sound Level Meter. Additionally, the Water Quality Lab conducts experiments on both wastewater and potable water.

Overall, RWESCK's laboratory primarily serves the needs of students, faculty, and organizations interested in engaging in innovative projects related to Science and Technology.



RWESCK Laboratories

SCANNING ELECTRON MICROSCOPE ANALYSIS

- Morphological analysis
- Microanalysis for qualitative and quantitative elemental evaluation

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rwescklabservices@gmail.com
KNUST
AK-447-3589



RWESCK Laboratories

X-RAY DIFFRACTOMETER (XRD) ANALYSIS

- Qualitative and semi-quantitative phase analysis and identification
- Determination of degree of crystallinity
- Determination of crystal properties

10:48
Wednesday, May 4

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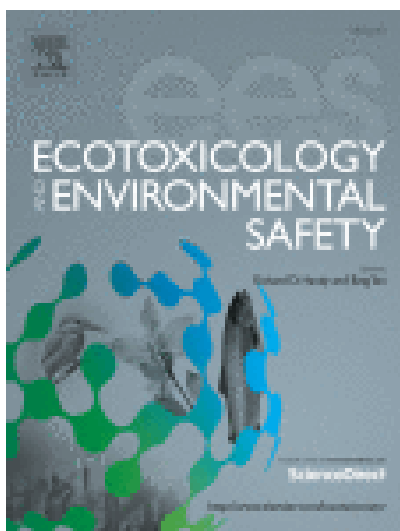


Residents In the Lower Volta River Basin of Ghana Face Health Risk of Drinking Contaminated Water- RWESCK Findings

A study at Regional Water and Environmental Sanitation Centre, Kumasi (RWESCK) in the Kwame Nkrumah University of Science and Technology asserts that a significant population within the Lower Volta River Basin (LVRB) of Ghana relies solely on untreated groundwater (GW) and surface water (SW) for various purposes. The study was published in the *Journal of Ecotoxicology and Environmental Safety*. The study sought to assess the origins of Nitrate (NO_3^-) contamination of GW and SW and associated health risks in the Lower Volta River Basin of Ghana.

During the field campaign, water samples were taken in duplicates for the purpose of quality assurance from 54 representative locations in the area, for hydrochemical and isotopic analyses. The findings of the analysis showed that sewage, animal waste, mainly cow dung applied as manure, and chemical fertilizers are the principal sources of NO_3^- contamination of the sources of water. Results of the spatial variations of percentage NO_3^- source apportionment also show significant contributions from sewage/manure and chemical fertilizers in both the GW and SW.

The study also indicated medium risk levels of GW NO_3^- contamination for children and adults while a high-risk level of contamination was observed for infants. In addition, nitrite (NO_2^-) contamination of the SW poses a health risk to all age categories in the basin. The study concluded that NO_3^- contamination of GW above the WHO limit was observed in almost 50% of sampled wells across the basin and recommended immediate measures for GW and SW quality protection.



Read Full Article

<https://www.sciencedirect.com/science/article/pii/S014765132030066X?via%3Dihub>



RWESCK Graduates 6th Batch of Postgraduate Students

Thirty seven students including those who earned PhD(12) and MSc(25) from Regional Water and Environmental Sanitation Centre, Kumasi (RWESCK) on March 17th 2023 graduated in the 56th congregation of the Kwame Nkrumah University of Science and Technology.

During the ceremony, His Royal Majesty Otumfuor Osei Tutu II, the Chancellor of the University, urged the graduands to stay grounded, helpful, and resolute in their interactions. “Remember that the effort needed to lift yourself from the ground is not instant, it requires discipline, dedication, commitment, and diligence and I’m sure that with this mentality, you will thrive,” he emphasised.

The Vice Chancellor, Prof.Mrs. Rita Akosua Dickson in her speech, congratulated the graduands and encouraged them to go out and be the better version of themselves. “Remain a lifelong servant and continuously develop yourself, always be on the lookout for avenues to add value to yourself. Remember that no life is significant unless it impacts the lives of others positively,” she stressed.

The batch has students from other African Countries like Nigeria and Siera Leone.



A group photo of the 6th Batch of postgraduate students



RWESCK Commissions Phase II of The State-of-the-Art Building

The Chancellor of the Kwame Nkrumah University of Science and Technology, His Royal Majesty Otumfuor Osei Tutu II on March 17th 2023, commissioned the Phase II of the Regional Water and Environmental Sanitation Centre Kumasi (RWESCK) Postgraduate Building. He was accompanied by Rev. John Ntim Fordjour, the Deputy Minister of Education, Ambassador Nana Effah Appenteng, Chairman of Council, KNUST and Prof. Mrs. Rita Akosua Dickson, Vice Chancellor KNUST, and other dignitaries.

The commissioning team was welcomed by Prof. Mrs. Esi Awuah, the Foundation Vice-Chancellor for the University of Energy and Natural Resources, and a faculty member of the Civil Engineering Department.

The building is well-equipped with lecture rooms, laboratories, conference rooms, and offices. RWESCK is a World Bank Africa Centre of Excellence project for Development Impact, which focuses on teaching and research under six thematic leads: Water resources and climate resilience, Water treatment technology, Sanitation technology, Water distribution technology, Innovations research clubs and Water governance.

The centre aims to be a recognized hub in advancing knowledge and expertise in these areas and to provide cutting-edge research to address challenges for the industrial and socio-economic development of Ghana and Africa.



His Royal Majesty, Otumfuor Osei Tutu II with the Vice Chancellor, Prof. Mrs. Akosua Dickson, at the Commissioning of RWESCK Phase II building

National Facilitation Unit Visits RWESCK

On Friday, March 24th, the National Facilitation Unit (NFU) visited the Regional Water and Environmental Sanitation Centre, Kumasi (RWESCK) to discuss important matters related to the Centre. The primary objective of this visit was to perform a project implementation evaluation at RWESCK and to gain an understanding of the status of the Centre's implementation. The visit also provided an opportunity to address any implementation challenges on-site.

During the meeting, Prof. Geophrey Kwame Anornu, the Centre's Deputy Director, gave a presentation on the Center's progress report, highlighting on the success stories, challenges, and the Centre's implementation status.

The Project Accountant presented the financial reports and discussed the sustainability plans of the Centre beyond 2024.



National Facilitation Unit with RWESCK management

World Events

International Women's Day Spotlight: Prof. Mrs. Esi Awuah



Women's Day is observed annually on March 8 in celebration of the outstanding contributions made by women, regardless of national, ethnic, linguistic, cultural, economic, or political boundaries.

This year, Regional Water Environmental and Sanitation Centre, Kumasi (RWESCK) puts a spotlight on Prof. Mrs. Esi Awuah, the foundation Vice Chancellor of the University of Energy and Natural Resources and a faculty member of the department of Civil Engineering KNUST.

Her unwavering passion for the field led her to actively participate in numerous WASH training programs across Ivory Coast and Liberia. Together with her son, Kobbina, and his fellow students from Cornell University in the USA, she had the incredible opportunity to restore the water pump house at Bimbila, which had been destroyed by fire in 2007. Additionally, they mechanized two hand-dug wells to benefit the local community. Later, the Cornell students generously provided computers and taught the staff and students at Bimbila Secondary School how to use them effectively.

Driven by her research, she successfully put an end to open defecation in Anloga, a suburb near KNUST, by constructing urinals and Mozambique latrines for both men and women in the Kotei area. Moreover, she conducted hygiene education sessions for selected women in Anloga. Together with her students, she made noteworthy discoveries during her research, shedding light on the presence of strange upper respiratory microbes in Ghana, which had



Prof. Mrs. Esi Awuah with her husband and two sons when she received the Ghana Institution of Engineering Award at the state house



Prof. Mrs. Awuah when she received the Officer of the Volta Award for her contribution in Engineering, environment, sanitation and water education in Ghana

been previously thought to be absent. Additionally, her research contributed to the development of effective control measures to be implemented in the hospital and hospitality industries. Furthermore, her findings highlighted the alarming increase in Burundi ulcer cases due to the presence of arsenic. In response, she and her team developed filters for the removal of iron and fluoride, which are yet to be tested on a larger scale.

Her research also focused on elucidating the mechanisms involved in pathogen removal in waste stabilization ponds. In recognition of her exceptional service to the nation, she received several esteemed awards, including the prestigious President's Award of the Order of Volta and the honorary title of Fellow of

the Ghana Institution of Engineering, conferred upon her as Doctor Honoris Causa. In 2011, she was honoured with the National Best Research Scientist Silver Award in the field of environment, water, and sanitation, solidifying her status as a lifelong recipient of the WASH Award.

Throughout her journey, she involved her family in her noble efforts to serve society, allowing them to share in the fulfillment of making a positive impact. Not limited to her scientific contributions, she also demonstrated her artistic talents by composing various songs for WASH workshops. Her repertoire includes anthems for UENR and UHAS, as well as those for the Ghana Chapter of OWSD and GHIE. To inspire the younger generation, she emphasizes that working in the sector is not merely a job but a call to serve and a form of worship. She encourages the youth to wholeheartedly dedicate themselves to any task they undertake, knowing that their hands can contribute to making a meaningful difference in the world.



Prof. as the Foundation VC of UENR on the left and on the right when she received the GhIE Presidential Award in 2023

World Events

RWESCK Marks World Water Day with Emina M/A Basic School in the Ashanti Region

World Water Day is observed annually on March 22nd to raise awareness about the global need for clean safe water. This tradition started in 1993, and the aim is to promote Sustainable Development Goal (SDG) 6, which is to ensure access to clean water and sanitation for everyone by 2030. The theme for this year's celebration is "accelerating the change to solve the water and sanitation crisis."

As part of the celebration, the Regional Water and Environmental Sanitation Centre, Kumasi (RWESCK) visited Emina M/A basic school in the Ashanti region to educate students about the water and sanitation crisis in the country. Addressing the pupils, The RWESCK team taught the pupils about the negative impact human activities have on water bodies and the harmful consequences to our health.

The team also emphasized the importance of preserving water as a vital resource for human life.

Mr. Kofi Annan, a student at RWESCK, stressed the significance of educating children about the consequences of their actions on society.

"This is where we are supposed to start from, whatever happens at this early stage of their lives has a bearing on them as they grow so it is important that we start from here," he noted.

The assistant headmistress of the school, Mrs. Lydia Osei expressed her gratitude to the team for such an educational yet entertaining programme.

"We are so much happy that you chose our school, and I have learnt a lot as well as the children and I know this will have a lasting impact on them," she said.

The children were also excited and shared some of the activities they would be doing now that they know the benefits of keeping water safe.



RWESCK representatives at Emina M/A Basic School



Interactive session with the Pupils



Newsletter

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IMPLEMENTING PARTNERS



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**ASSOCIATION OF
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