

MPhil Research Funding

**OCCURRENCE, FORMATION, AND TOXICITY OF DISINFECTION BY-PRODUCTS
IN DRINKING WATER TREATMENT**

Start Date: 1st January 2023

Duration: 1 year

Venue: Environmental Science Department, KNUST and Laboratoire LaSIRE, Université de Lille, France

Project Summary

During drinking water treatment, chemical disinfectants like chlorine are often added at the last and final stage to disinfect the water and maintain a residual concentration in the distribution network. However, the disinfectants may interact with dissolved organic matter to produce undesired disinfection by-products (DBPs), many of which are genotoxic and carcinogenic. The characteristic of Natural Organic Matter (NOM) greatly influences the nature and reactivity of the DBP formed. Increasing anthropogenic activities and shifts in climatic variables such as erratic rainfall patterns and rising temperatures also significantly impact the quantity and quality of dissolved organic carbons in source waters.

Objective

The study aims to understand the factors that influence the characteristics of DBP precursors in source waters and drinking water treatment plants, cost-effective means of removing the precursors, and the impact of DBPs on aquatic ecosystem.

Eligibility

The offer is open to first-year Environmental Science MPhil Students who will be undertaking their research next academic year or MSc. Environmental Science holders who want to top-up to an MPhil. Environmental Science. The successful candidate should have a background in Chemistry, Environmental Science, Environmental Engineering, Chemical Engineering, or a related field. S/he should have an interest in research and scientific communication, work independently, organized, detailed oriented, resilient and with strong statistical expertise. Candidates with previous scientific publications are encouraged to apply.

Sponsorship details

The successful candidate will benefit from the following:

- Six months of fully sponsored research mobility at the Université de Lille, France.
- Participation in an international congress to present research findings.
- Possibility of fully-funded Ph.D. scholarship at the Université de Lille, France.

Interested candidates should send their CV and cover letter to junias.aduseigyamfi@knust.edu.gh no later than **21st September 2022**.