



IHE Delft Institute for Water Education, the world's largest international graduate water education facility, works to strengthen water sector capacity to contribute to **a world free of poverty and injustice, in which people manage their water and environmental resources sustainably and equitably.**

More than 120 of IHE Delft's 200 staff members are academics from **all over the world**. About 250 guest lecturers from global academia and industry contribute to the Institute's educational programmes. Each year, 750 international professionals, including about 200

MSc students, attend courses at IHE Delft. Our working language is English, and we promote a **healthy work-life balance** through measures that include support to staff who want to work part of their time from home.

IHE Delft is a unique knowledge institute in the Dutch research and educational landscape that combines **excellence** in education and research with work to advance global sustainable development. **Partnerships** are integral to achieving this mission: The Institute works closely with universities, government agencies, NGOs, and private sector institutions in the Netherlands and around the world. Through research, education and institutional strengthening, Institute staff make a **tangible contribution towards all Sustainable Development Goals (SDGs) in which water is key.**

Researcher “Enhancement of anaerobic digestion via biochar obtained by hydrothermal carbonization of agricultural waste in rural Africa” – Bio4Africa project 38 hours per week

The WSSEE department aims at contributing to the global goal of providing safe drinking water and sanitation to all in an environmentally sustainable manner, including the recycling and reuse of resources. The department has three chair groups, of which in particular the PPRR (Pollution Prevention and Resource Recovery) chair group focuses on recycling & reusing all resources (water, energy and waste streams). PPRR contributes to research and innovation for the application of environmental technologies in the framework of the water-energy-food nexus to support circular economies in developing countries and countries-in-transition. The focal point is the conversion of organic waste into new resources.

Aligned with these research objectives, PPRR and more generally the WSSEE department is involved as a partner in the H2020 project called Bio4Africa. This project aims at transferring to African rural areas simple, small-scale and robust biobased technologies (green biorefinery, pyrolysis, hydrothermal carbonization (HTC), briquetting, pelletizing, biocomposites and bioplastics production), adapted to local biomass waste, needs and contexts. The idea is to enable farmers to sustainably produce a variety of higher value biobased products and energy (animal feed, fertiliser, gas and water pollutant adsorbents, construction materials, packaging, solid fuel for cooking and catalysts for biogas production), therefore diversifying and increasing their income without compromising food security and ecosystem services. Four pilot cases have been selected for that purpose (Senegal, Côte d'Ivoire, Uganda, Ghana).

IHE is in charge of the development and adaptation of the HTC technology from liquid/wet waste to produce hydrochar for use as fertiliser, gas/water pollutant adsorbent, solid fuel for cooking and catalyst in anaerobic digestion.

The researcher will:

- Support the local partners in Senegal to build the HTC pilot unit, implement it in the University Assane Seck of Ziguinchor and perform campaigns of tests in it using the different feedstock selected;
- Test at lab-scale different biochars produced in the frame of the project (both by HTC and pyrolysis) in order to understand the mechanisms favourable for enhancement of biogas

production and further optimize the overall value chain (optimal feedstock, biochar production conditions). Those tests will be carried out in the existing lab facilities in IHE.

Requirements

- PhD in Chemical Engineering, Process Engineering, Environmental Engineering, Civil Engineering or related field;
- Experience in pilot construction and installation;
- Experience in lab work using analytical devices;
- Experience in thermal conversion processes (HTC, pyrolysis);
- Experience in anaerobic digestion;
- Willingness to work in an international collaborative project (experience in African environment is an advantage), including short missions abroad.

Funding of the position

The funding will be secured by the H2020 project Bio4Africa.

Terms of employment

The researcher position is for 12 months and is expected to start from August 2022 (dates can be adjusted).

The employment contract is for 1,0 fte / 38 hours per week. A competitive salary is offered depending on qualifications and experience in accordance with the conditions of employment for Dutch Universities.

The appointment implies entry into the Netherlands' Civil Service Pension Fund (ABP). IHE Delft offers an attractive, multiple-choice employee benefits scheme, year-end bonus and generous pension scheme. We also offer 31 days leave based on a 38 hours working week. Candidates must be prepared to carry out short-term missions abroad.

Information and application

Additional information can be obtained from Capucine Dupont (c.dupont@un-ihe.org).

Applications (in English) should respond specifically to the requirements and can be sent by **22 May 2022** including curriculum vitae, motivation letter and the names and contact details of two contactable referees (*all together as one PDF file with your family name as the filename*), to IHE Delft, attn. Human Resource Management (E: recruitment@un-ihe.org), PO Box 3015, 2601 DA Delft, The Netherlands, stating vacancy-number **22-WSSEE-02**.

By submitting your application for this vacancy, you agree with the privacy statement below:

The personal data you share through your application file and other means will only be used by IHE Delft for the purpose of the recruitment and selection process in order to evaluate your suitability for the vacancy for which you have applied, as well as for communication purposes related to the vacancy. IHE Delft will process your personal details in accordance with the EU General Data Protection Regulation of 25 May 2018. For more information we refer you to the privacy statement of IHE Delft: <https://www.un-ihe.org/privacy-statement> Without your prior consent or other legal basis, no information will be shared with third parties. For further questions please contact our Data Protection Officer at dpo@un-ihe.org.