IHE Delft is the largest international graduate water education facility in the world and is based in Delft, The Netherlands. The mission of IHE Delft is to work in partnership to strengthen capacity in the water sector, to achieve global sustainable development. IHE Delft has a permanent staff of 220 of which more than 140 are academics from all over the world, while about 250 guest lecturers from academia and industry contribute to our educational programmes. Each year 750 professionals (including about 200 new MSc students per year) from all over the world attend various water-related courses at IHE Delft. The Institute has an international staff & student community with English as the working language.

IHE Delft Institute for Water Education is member of a consortium of 20 partners who was recently awarded a grant by the European Commission for the project Intelligent Water Treatment Technologies for water preservation combined with simultaneous energy production and material recovery in energy intensive industries (intelWATT). This 3.5-year project (2020-2024) focuses on developing innovative, cost efficient, smart separation technologies applied in energy and water intensive industries. In this context Water Supply, Sanitation and Environmental Engineering (WSSEE) department of IHE Delft intends to further strengthen the expertise in the field of drinking water treatment technologies by recruiting a:

Post-doctoral position
0.8 FTE/32 hours

Project description

Historically, industrial infrastructures around the world were commonly developed within a context of unconstrained water resource availability. However, unsustainable uses of water resources, population dynamics, along with climate change affect to this critical resource becoming scarce – a trend which is expected to continue. Water use has been increasing worldwide by about 1% per year since the 1980s. Global water demand is expected to continue increasing at a similar rate until 2050 due to rising needs of the industrial and domestic sectors, and will lead to an increase of 20 to 30% above the current level of water use.

In this context, the main aim of IntelWATT is to develop innovative, cost efficient, smart separation technologies applied in energy and water intensive industries. The goal of the project is to demonstrate 3 TRL7 case studies that will achieve water preservation along with energy production and material recovery. The proposed solutions will also target at zero liquid discharge while implementing maximum water reuse. Tailor made sensors and automated decision making mechanisms will optimize the process conditions in real time. The case studies will be implemented in crucial EU and global industrial applications such as electricity production, mining and metal plating.

Responsibilities

- The research fellow will work directly with the project leader of IHE Delft Dr. Nirajan Dhakal, and will be hosted by the WSSEE Department of IHE delft in Delft, The Netherlands.
- The research fellow will participate in the activities and deliverables of the project under the supervision of Prof. Maria D. Kennedy and Dr. Nirajan Dhakal (IHE Delft).
The research fellow will be attending the project meetings (in Europe)
The research fellow will be expected to publish the obtained results in peer reviewed journals and to present the results at international conferences.

Requirements

- PhD degree in chemical engineering/civil engineering/and environmental engineering
- Preference will be given to candidate having proven track record in research in the area of membrane desalination
- A good working knowledge of water quality methods (bacterial growth potential using flow cytometry, ATP, Transparent exopolymer particles (TEP), Modified fouling index (MFI-UF), SDI etc)
- Experience with and/or affinity for capacity building (education and training) activities
- Affinity for laboratory/pilot studies
- Proficiency in English is a prerequisite; working knowledge of one or more 'large' languages is a plus;
- Excellent communication and writing/reporting skills;
- Ability to work in multi-disciplinary teams;
- Ability to function in a multi-cultural environment;
- Readiness to travel and participate in education, research and capacity building projects abroad.

Terms of employment

This position is a temporary that contributes to a project (intelligent Water Treatment Technologies for water preservation combined with simultaneous energy production and material recovery in energy intensive industries, intelWATT) for a maximum period of 2.5 years (0.8 fte). The position is based in Delft, The Netherlands. A competitive salary (scale 10) 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). Candidates must be prepared to carry out long- and short-term missions abroad.

Information and application

Additional information about the vacancy can be obtained from Prof. Maria Kennedy, Professor of Water Treatment Technology and head of the WSSEE Department (+31152151774 or m.kennedy@unihe.org or n.dhakal@unihe.org).

Applications in English, including curriculum vitae, statement of teaching and research interests and motivation letter (as one PDF file with your family name as the filename), should be sent before 11 March 2021 to IHE Delft, attn. Human Resource Management (E: recruitment@un-ihe.org), PO Box 3015, 2601 DA Delft, The Netherlands, stating: 21-WSSEE-03.