KWR

One year internships at KWR watercycle research institute

Topic: Engineered nanoparticle removal from water sources

Background: Chemical/Process/Environmental/Civil Engineer

Background:

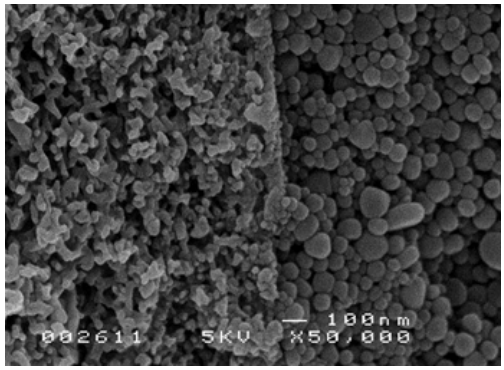

Figure 1: eNPs om membrane surface after filtration.

The increasing use of engineered nanoparticles (eNPs) in consumer products, pharmaceutical products, etc. will lead to an increased release in the environment, making eNPs an emerging source of pollutants in air, soil and water systems. Many aspects related to eNPs are largely unknown or not well understood yet, for instance their toxicity, their health effects, their fate and their behaviour in the environment. This lack of knowledge makes eNPs removal from water a technological and societal priority with respect to water safety. The potential risk of eNPs might be minimized assuring their removal during the production of drinking water.
In water treatment plants a variety of techniques is available to improve the water quality. In the last decades, particularly membrane separation techniques have emerged as a viable solution to remove pathogens (virus and bacteria), emerging micro pollutants, colloids and dissolved compounds (both organic and inorganic) from sources of drinking water. Since eNPs in water may behave similar to colloids they are expected to be efficiently removed by membrane filtration.

Intership description

During the internship period, the student will be exposed to both office and laboratory areas, including carrying out a literature study, experimental planning and design, experimental operation with membrane filtration (and other conventional water treatment such activated carbon filtration, sand filtration…) results analysis, and reporting. The student will have the opportunity to expand their knowledge in the field of water treatment and to learn a variety of research techniques through first-hand experiences. He/she will receive the necessary guidance and supervision to ensure a mutually beneficial learning and working process within the Drinking Water Treatment team.
For more information, our website can be consulted:
http://www.kwrwater.nl/team_drinkwaterbehandeling/

Requirements

- Fluency in English
- Background with applied chemistry or environmental engineering or sanitary engineering.
- Hold or currently pursuing a Master's Degree or equivalent

Internship fee will be provided and housing can/will be provided by KWR. This internship can be started from September/October 2013 and will take 6 to preferably 12 months.

Please send your application to:
Roberto.Floris@kwrwater.nl

Watercycle Research Institute