

Characterization of high water flux SiC membrane



Ceramic LiqTech membranes made from silicon carbide (SiC) are cutting-edge technology in water filtration, considering the higher flux and lower environmental footprint compared to traditional ceramic membranes. However the performances of these membranes can be further improved by the definition of a clear cut-off and by understanding the mechanism behind fouling and impurity rejection. The achievement of these goals will require the development of new methods (in addition to the use of existing procedures) for ceramic membranes characterization and for linking the membrane performance to its pore structure and surface properties.

Project type

Topic is suitable for MSc project

Pre-requisite

- Colloidal chemistry and suspensions characterization methods
- Analytical techniques for organic molecules in water
- Test of membrane performance
- Porous structures characterization
- Surface properties: streaming potential, profilometry, and microscopy

Group size

1-2 students

Department of supervisors

Main supervisor: DTU Energy

Co-supervisor: LiqTech International A/S, DTU Nanotech or DTU Chemical Eng.

Contact person

Senior Researcher Michela Della Negra, DTU Energy (midn@dtu.dk)

