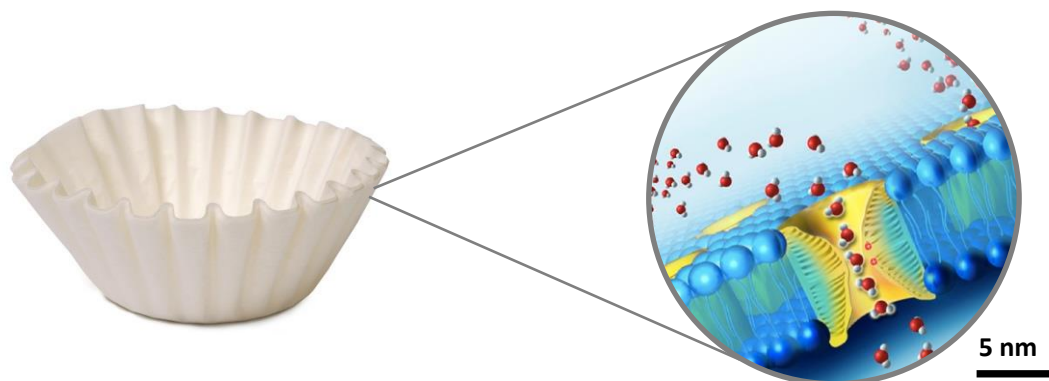


Revolutionizing water purification through biotechnology

Clean water is one of the basic needs of human society. The Danish cleantech company Aquaporin A/S is redefining water purification, using water transporting proteins in a novel way and on an unprecedented scale. These molecular water filtration proteins (aquaporins) are incorporated into polymeric support membranes and can then be used as ultra high quality filter membranes. In collaboration with NXUS scientists, the structure of different polymeric supports with and without aquaporin present have been investigated. This was done by neutron- and X-ray based small-angle scattering experiments (SANS and SAXS) at leading large-scale facilities.



Novel water filtration membranes were investigated, providing insight on the nanometer scale of the structure of the polymeric support of the filtration membranes.

Through the combination of both X-ray and neutron experiments, the detailed structure of the polymeric supports has been described, and the effect of inserting aquaporins has been investigated. These results could not have been obtained by other techniques and allows Aquaporin A/S to understand their systems in higher detail and to aid further development. The project also successfully demonstrates the use of neutrons and X-rays in applied biotechnology.



AQUAPORIN

Contact: NXUS: Lise Arleth, arleth@nbi.ku.dk
Aquaporin: Claus Hélix-Nielsen, chn@aquaporin.dk
www.NXUS.dk