

Eawag Seminar Invitation

How fluorescence spectroscopy can help to optimize water treatment

Speaker Prof. Kathleen Murphy, Architecture and Civil Engineering, Chalmers University of Technology, Sweden

When December 15, 2022, 16.00 – 17.00, CET

Where Eawag Dübendorf, room FC C20 and online via Zoom.

Please contact seminars@eawag.ch for access details to join online

Abstract Fluorescence spectroscopy for revealing the composition of natural organic matter in aquatic systems and predicting its fate.

Natural organic matter (NOM) derived from deceased and living organisms influences chemical reactions and contaminant transport in all aquatic systems.

Predicting the fate of NOM and micropollutants in the environment thus depends on measuring NOM abundance and character, but NOM is difficult to measure because it consists of diverse molecules that can't be fully isolated. Fluorescence spectroscopy enables rapid measurements of NOM in water, but the relevance of this approach is debatable when only a small fraction of NOM molecules actually fluoresce. In this talk I will discuss how despite these limitations, fluorescence spectroscopy can inform about the overall composition of NOM in water and help to predict how it will behave in response to physical, chemical and biological processes.

Examples will be discussed from natural and engineered systems, focusing on freshwater resources and drinking water treatment plants.