

Title	Evaluation and Optimization of the Operation of Membrane Bioreactors with Simultaneous Addition of Activated Carbon Powder (MBR-AKTIV)
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<p>The project MBR-AKTIV investigates the simultaneous addition of pulverized activated carbon (AC) into the membrane bioreactors (MBR) of the sewage treatment plant Nordkanal of the Erfstverband in Kaarst. The membrane technology offers the advantage of complete retention of activated carbon in the wastewater treatment plant.</p> <p>Using two MBRs operated in parallel (test and reference MBR) the effects of the activated carbon on the membrane bioreactor and its treatment performance can be investigated. In addition to the in-depth verification of the general suitability of the AC-MBR process for the elimination of organic micropollutants and the improvement of the effluent quality, the modified properties of the activated sludge with regard to its filterability and dewatering properties are of particular importance. By using large-scale and semi-industrial methods for sludge thickening and dewatering, it is possible to compare the behaviour of activated sludge with and without addition of activated carbon in common aggregates.</p> <p>Reliable statements on the operating costs and the costs of AC dosing can also be made on a large scale. These are summarized in general operating instructions and planning guidelines. At the end of the project, a detailed and comprehensive evaluation of the AC-MBR process and an estimation of the application potential in North Rhine-Westphalia will be available as a basis for decision-making processes of municipal waste water disposal companies with regard to the fourth treatment step.</p>	