



Cite this: *Chem. Commun.*, 2019,
55, 11143

Received 11th July 2019,
Accepted 18th August 2019

DOI: 10.1039/c9cc05337a

rsc.li/chemcomm

Ubiquitous aluminium contamination in water and amyloid hybrid membranes as a sustainable possible solution†

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We develop a membrane technology based on amyloid fibrils to remove aluminium from water and minimize its exposure to humans. We study aluminium adsorption by amyloid fibrils by evaluating the binding isotherms, the thermodynamics and the effects of different parameters. Amyloid-based membranes demonstrate outstanding removal efficiencies beyond 98%.

significance. Typical technologies for aluminium removal from drinking water are reverse osmosis and vapor distillation, which both suffer from high-energy demand⁷ and the need to re-adjust the oligomineral composition prior to water consumption.⁸ Thus, there is a need for more sustainable and efficient approaches for removal of aluminium from drinking water.