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Drinking Water
Engineering and Science
Discussions

Interactive comment on "Preparation of TFC Membranes Supported with Elelctrospun Nanofibers for Desalination by Forward Osmosis" *by* Mustafa Al-Furaiji et al.

Anonymous Referee #2

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The manuscript reported the attempt to fabricate TFC FO membrane on an elelctrospun nanofiber support.

The topic is not new and there have been other studies addressing the use of nanofiber support for TFC FO membranes. Could the authors highlight what is the difference of the reported method as compared to the methods reported in the literature? What would be the advantage of electrospun nanofiber support compared with other nanofiber supports for TFC FO membranes?

The authors compared the lab-scale fabricated FO membranes with the commercial FO membranes. There showed marginal improvement in the water flux and salt rejection

(16 LMH v.s. 13 LMH; 4 GMH v.s. 3 GMH). What would be the potential challenge in scaling up this technology towards a commercial new product? Would scaling-up lead to sacrifice of the performance?

There are numerous FO products in the market. How do your compare the water flux and salt rejection with other commercial FO membranes? Could you cite the figures from literature for comparison?

The strength of the PAN nanofiber support layer has been tested. Have you tested the adherence strength of between the support layer and separation layer? Have you done long-term test on the robustness?

The thickness of support layer is also a crucial factor. A thick support layer will lead to concentration polarization in the support layer, which impairs the performance. Could you compare the thickness of support layer with the commercial products? Would it be feasible to make even thinner support layer with the electrospun nanofiber method?

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