Supplementary material

Development and characterization of 3D-printed feed spacers for spiral wound membrane systems

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Numerical modelled data are presented as a function of crossflow velocity (m s^{-1}) in the paper (Figures 5, 7 and 10) and as a function of feed flow (L h^{-1}) to the membrane fouling simulator (MFS) in the supplementary material (Figures S1, S2 and S3).

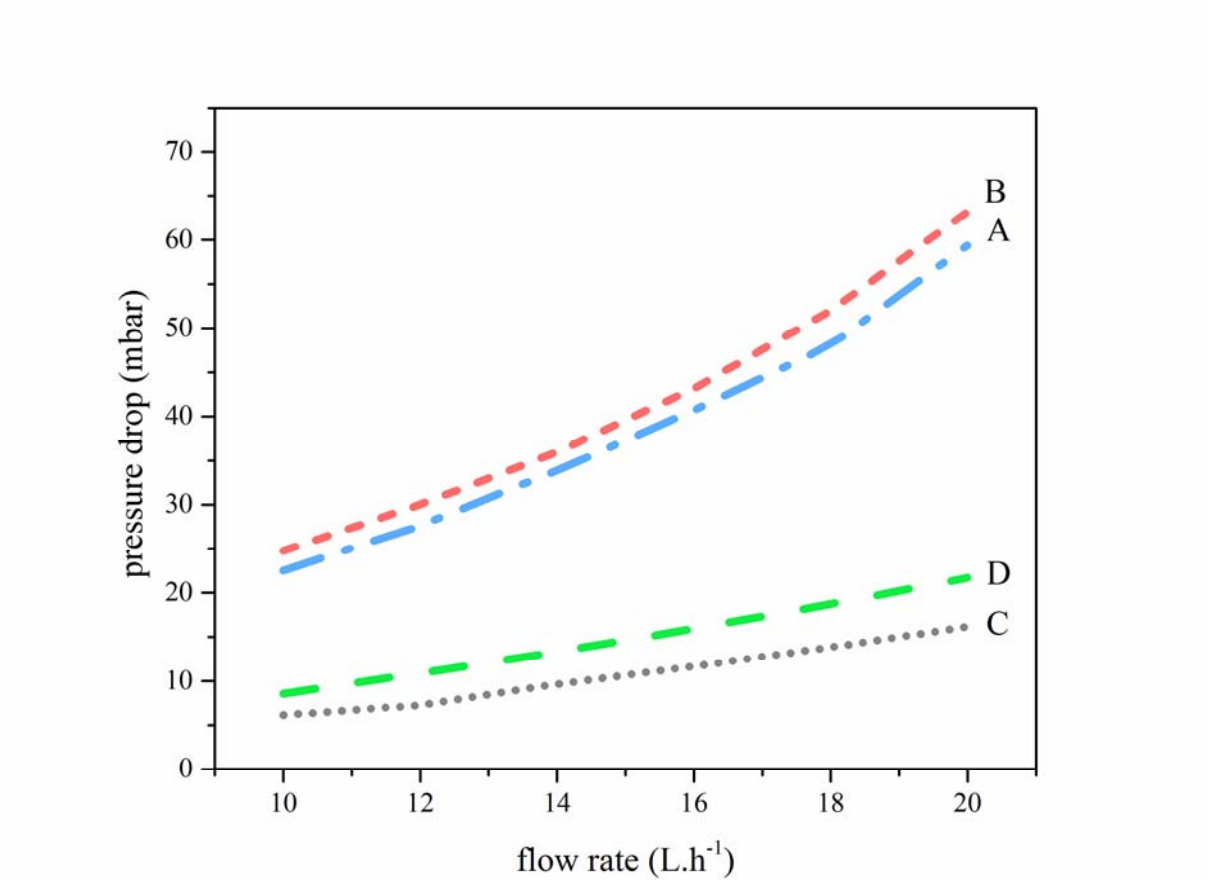

Fig S1: Mathematically modelled feed channel pressure drop (mbar) as a function of feed water flow (L·h^{-1}) for (A) standard feed spacer, (B) spacer with modified filament angle, (C) spacer with increased mesh size and (D) spacer with modified filament angle and increased mesh size.

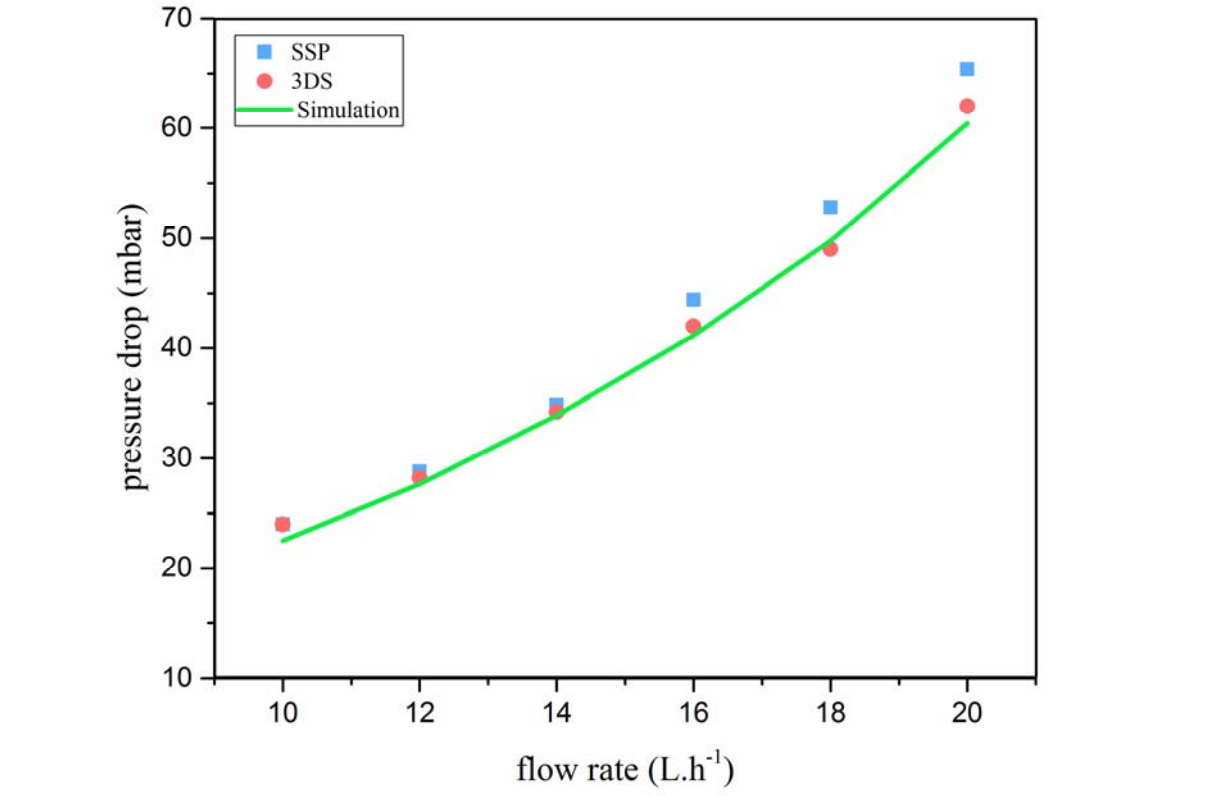

Fig S2: Feed channel pressure drop (mbar) as a function of the feed water flow ($L \cdot h^{-1}$) simulated for feed spacer 3DS using numerical modeling and measured for the feed spacers SSP and 3DS using MFS.

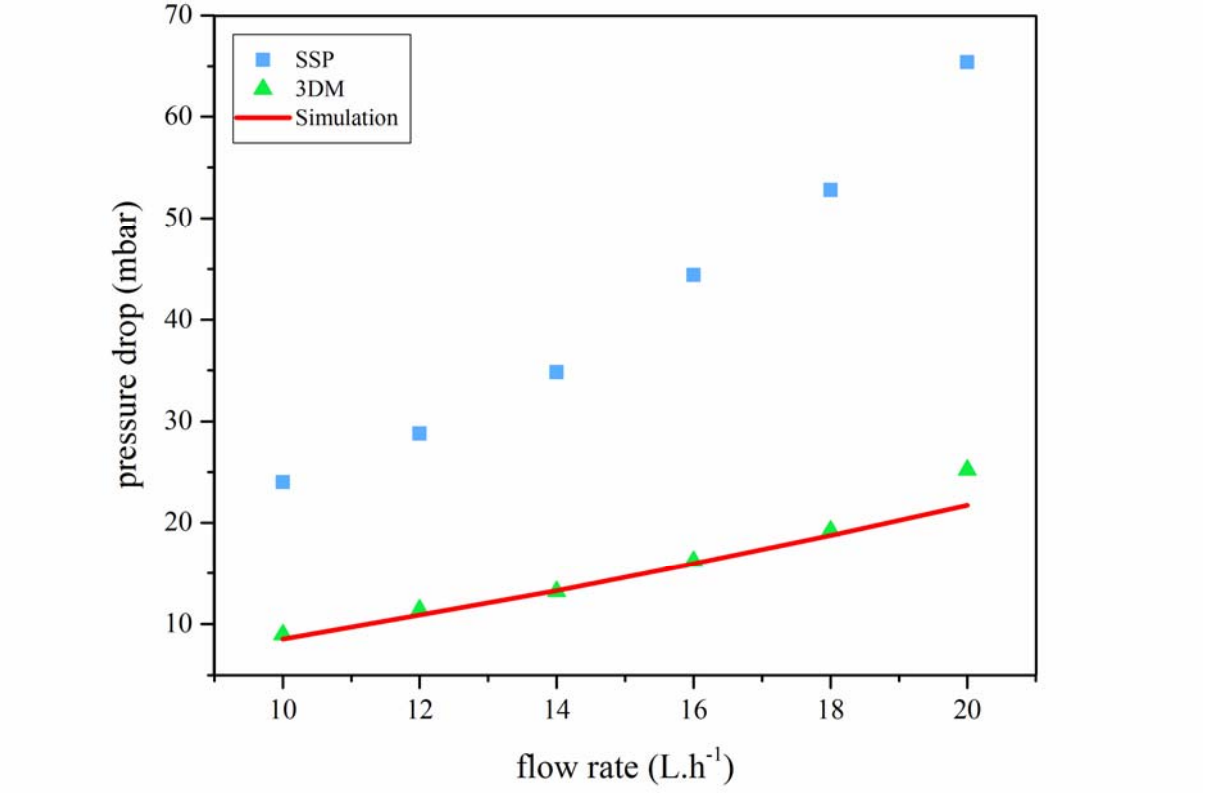

Fig S3: Feed channel pressure drop (mbar) as a function of the feed water flow ($L \cdot h^{-1}$) simulated for feed spacer 3DM using numerical modeling and measured for the feed spacers SSP and 3DM using MFS.