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Title: Comparison of biomass from integrated fixed-film activated sludge (IFAS), moving bed biofilm reactor (MBBR) and membrane bioreactor (MBR) treating recalcitrant organics: importance of attached biomass

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Highlights

- Five types of biomass from MBBR, IFAS, and MBR were compared for the degradation of OSPW.
- MBBR and IFAS-biofilm showed high AEF and classical NAs removal, MBR-flocs showed high COD removal.
- NAs degradation was highly dependent on the carbon number and NA cyclization number according to UPLC/HRMS analysis.
- Denitrifiers were more abundant in suspended phase of activated sludge flocs.

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