

Supplementary Information

Bio-enhanced Granular-Activated Carbon Dynamic Biofilm Reactor for Greywater Treatment: Biofilm Growth, Performance and Mechanisms

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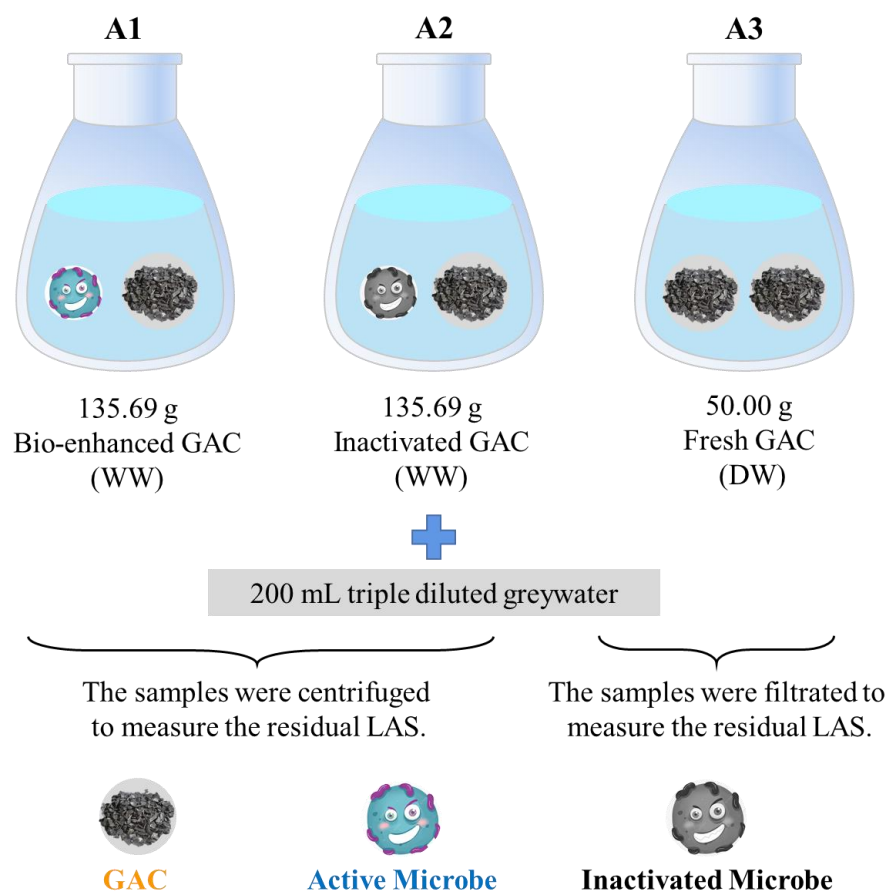


Figure S1 Batch-experiment design to differentiate the adsorption and biodegradation of linear alkylbenzene sulfonates (LAS) in the bio-enhanced granular activated carbon (GAC, A1), inactivated GAC (A2) and fresh GAC (A3).

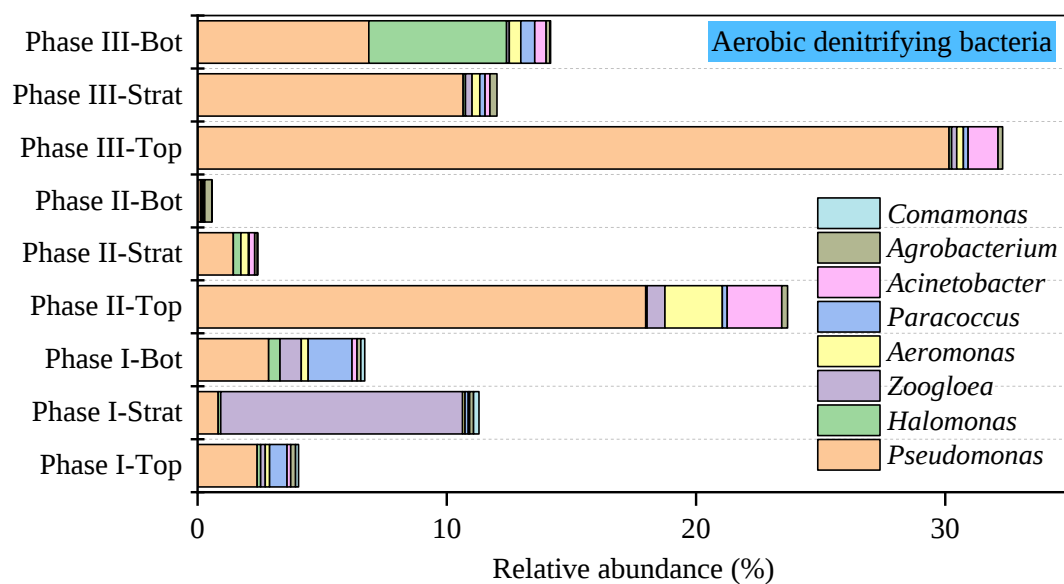


Figure S2 Relative abundances of the typical aerobic denitrifying bacteria at different reactor positions and operation Phases. Start and Bot are stratification and bottom, respectively.

Table S1 Greywater formulation (According to NSF 350)

Product	Concentration (g/10L)
Body wash with moisturizer	47.7
Toothpaste	3.98
Deodorant	2.65
Shampoo + Conditioner	53.0
Lactic acid	3.98
Bathroom cleaner	13.3
Liquid hand soap	30.5
Liquid laundry detergent (2X)	47.0
Liquid laundry fabric softener	24.7
Na ₂ SO ₄	4.70
NaHCO ₃	2.35
Na ₃ PO ₄ ·12H ₂ O	10.9

Table S2 Parameters of the synthetic greywater

Parameter	Unit	Value
COD ^a	mg/L	276 ± 21
LAS ^b	mg/L	84 ± 6
LAS/COD	%	69 ± 1
TN ^c	mg/L	8.4 ± 1.3
NH ₄ ⁺ -N	mg/L	4.6 ± 0.5
NO ₂ ⁻ -N	mg/L	0.47 ± 0.11
NO ₃ ⁻ -N	mg/L	2.34 ± 0.17
pH	-	7.05 ± 0.05

^a COD is chemical oxygen demand; LAS is linear alkylbenzene sulfonates; TN is total nitrogen.