

Supplementary Material

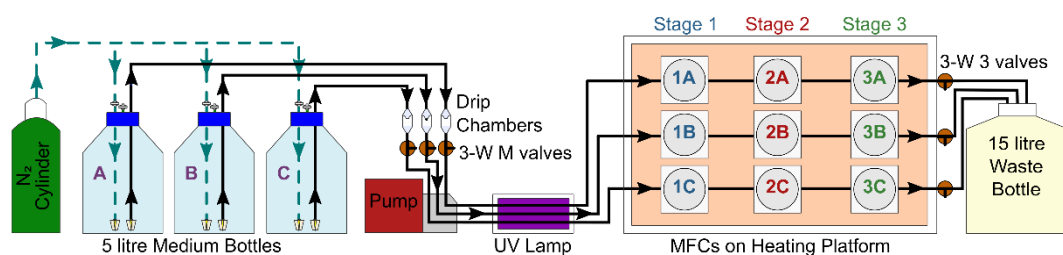


Figure S1: Setup for the single-pass, continuous flow system with triplicate feed lines (A, B and C) of three stages of MFCs per line connected hydraulically in series.

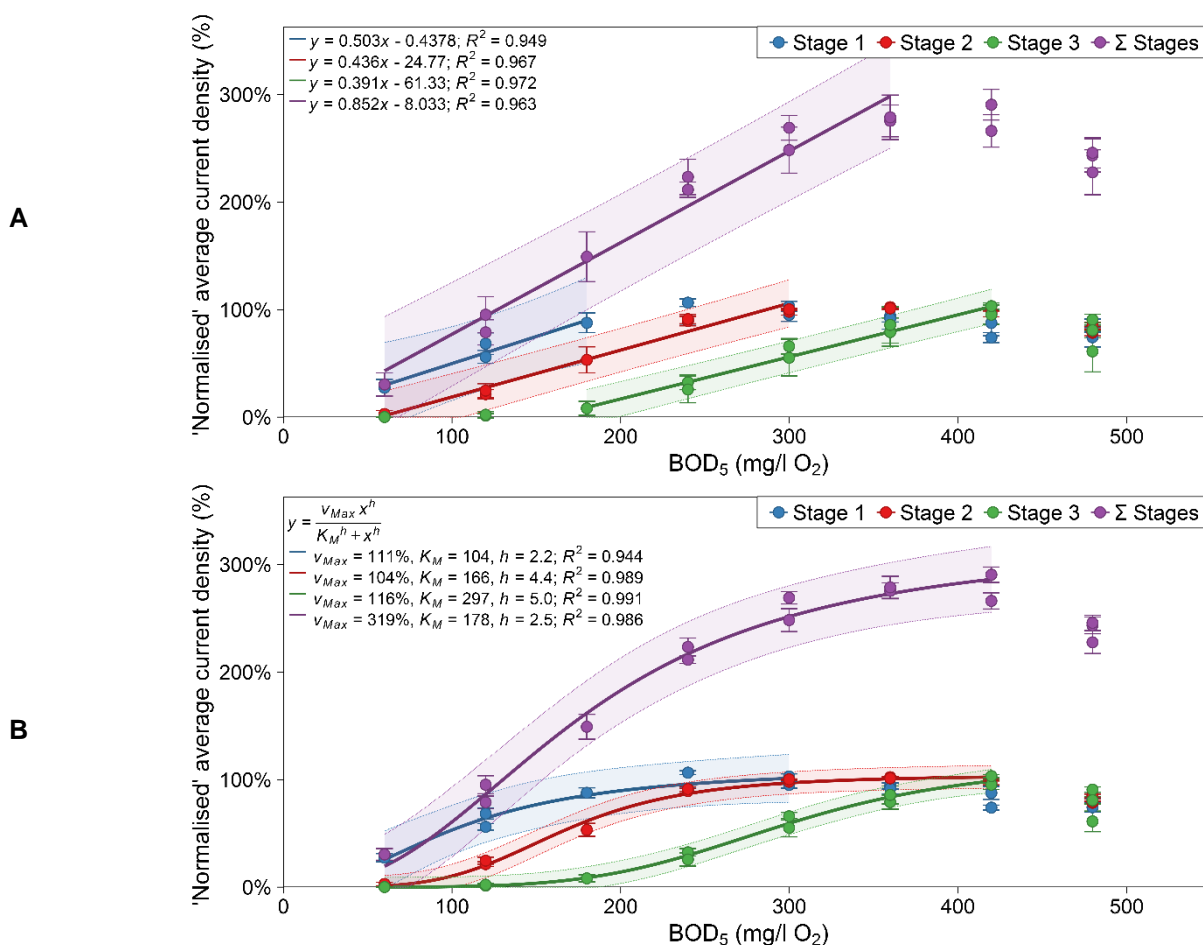


Figure S2: Amperometric calibration curve fitted with (A) linear and (B) Hill models (up to non-inhibitory substrate concentrations) of 'normalised' average stable current density against BOD_5 (estimated from GGA concentrations) for each stage and the sum of stages in the hydraulic array. Shaded areas represent the 95% prediction interval from model lines and error bars are \pm SD from replicate MFCs. K_M in units of $mg/l O_2 BOD_5$.

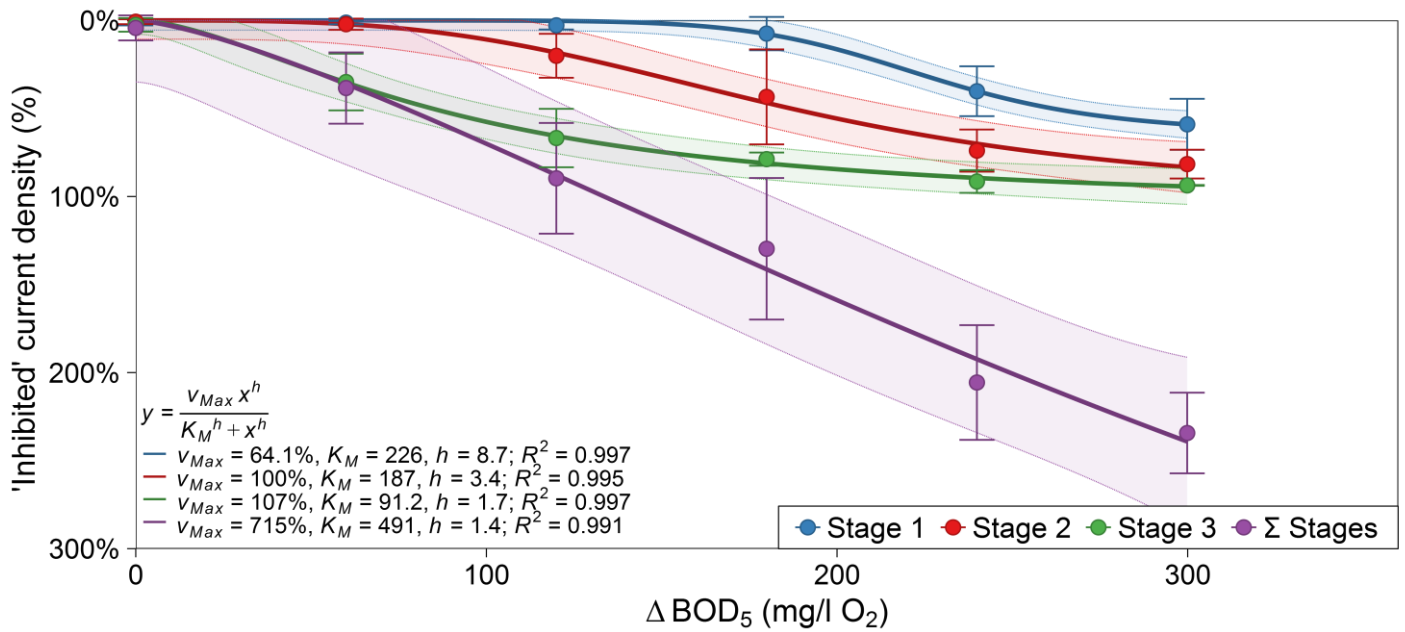


Figure S3: Normalised, current density loss calibration curve fitted with Hill model for response of the flow-mode MFCs to 90-minute decreases in BOD (ΔBOD_5 ; estimated from GGA concentration). Analysis uses 360 mg/l O_2 BOD_5 as the reference point (0% current loss). The Σ Stages data is normalised to 300% (sum of three MFC stages) to permit comparisons to non-normalised data for convenience. Shaded bands represent the 95% prediction intervals from model lines and error bars are range from duplicate cells in flow channels A and C.

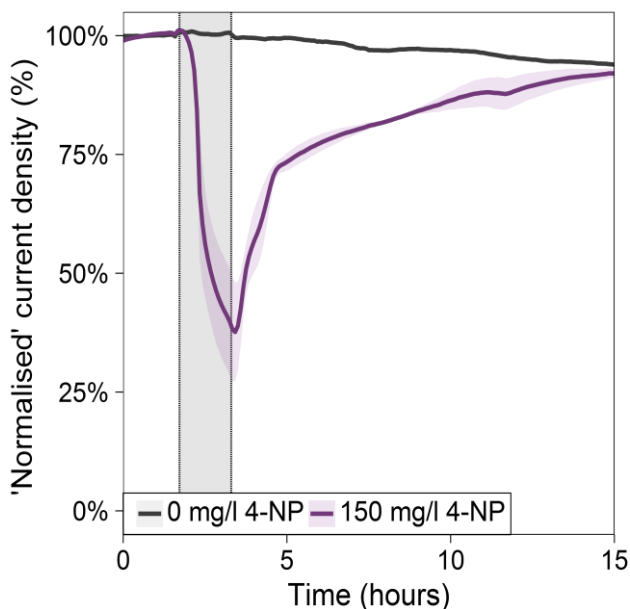


Figure S4: Normalised average current density response of the first stage of MFCs to 150 mg/l 4-NP, followed by the recovery to 100% normalised current density over 11.5 hours. The dashed line-enclosed region is the period during which the toxicant-doped medium was fed to MFCs and decreases in current density were observed. The coloured, shaded band is the range of values from duplicate MFCs in position 1A and 1C (the 1B response is the control fed 0 mg/l 4-NP in black).

Table S1: Recovery times of three-stage MFCs to toxic media containing 4-NP. Recovery times calculated between time that non-toxic feeding was restored from valve 3-W M and the point at which the normalised current density in Channels A and C was equal to that of Channel B (controlnn fed with no 4-NP). The HRT-adjusted recovery times (time between non-toxic feed reaching the MFC and the normalised current density recovering) are given in brackets for each MFC stage.

4-NP (mg/l)	Recovery time (hours)			Σ Stages
	Stage 1	Stage 2	Stage 3	
10.0	1.2 (0.9)	2.0 (1.5)	2.0 (1.2)	2.0
25.0	1.5 (1.2)	2.0 (1.5)	2.0 (1.1)	2.0
75.0	2.7 (2.4)	2.7 (2.1)	2.8 (1.9)	2.8
112.5	3.8 (3.5)	2.8 (2.2)	3.1 (2.2)	3.8
150	11.5 (11.2)	2.8 (2.2)	3.5 (2.6)	11.5