Supplementary Information

Enhanced biodiesel production from glucose-fed activated sludge microbial cultures by addition of nZVI and $FeCl_3$

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This file contains the following information:

Fig. S1. The effect of various pH on the change of (a) biomass and (b) gravimetric FAME yield with time elapsed and (c) FAME yield after 7 d of fermentation obtained from glucose-fed activated sludge microorganisms with a constant initial C/N ratio of 70.

Fig. S2. The effect of various initial C/N ratios on the change of (a) biomass and (b) gravimetric FAME yield and (c) FAME yield after 7 d of fermentation obtained from glucose-fed activated sludge microorganisms at pH 4.

Fig. S3. The change of (a) glucose concentration (b) ammonium concentration (c) biomass (d) gravimetric FAME yield during the fermentation period under various nZVI treatments.

Fig. S4. The change of (a) glucose concentration (b) ammonium concentration (c) biomass (d) gravimetric FAME yield during the fermentation period under various $FeCl_3$ treatments

Fig. S1.

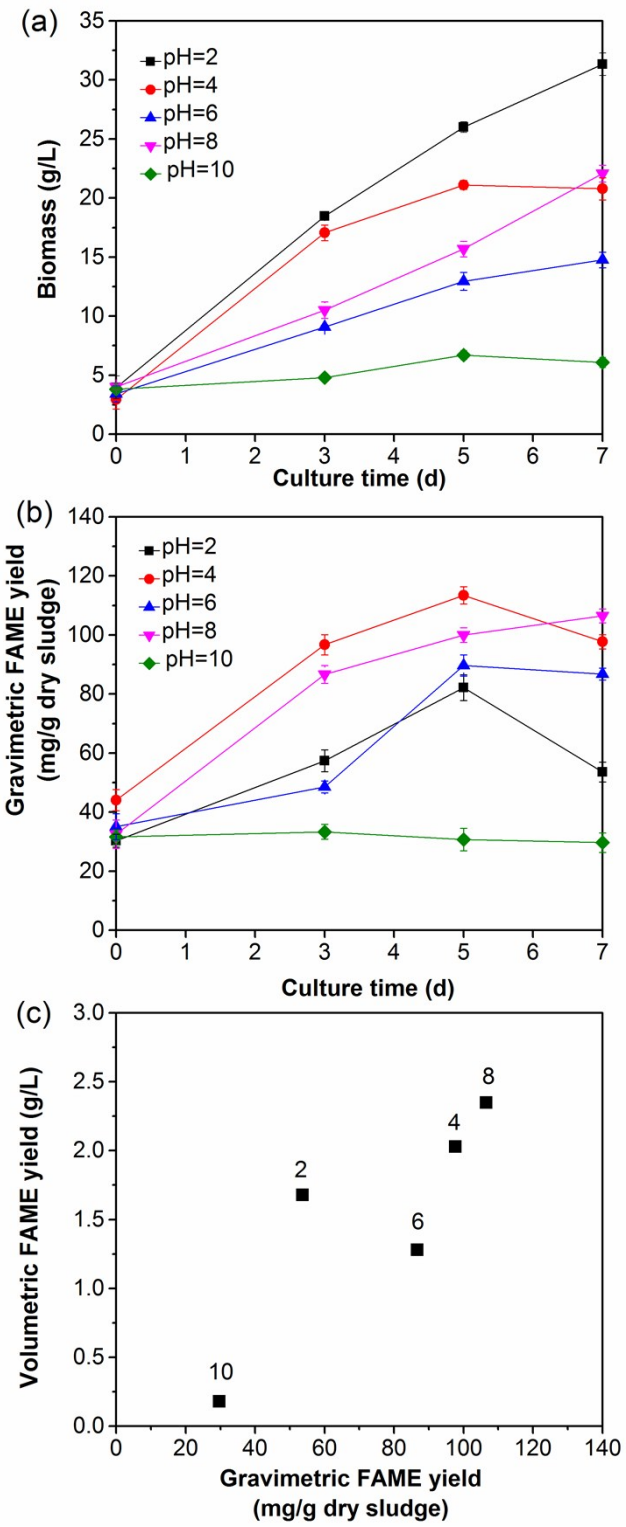

(a)
Biomass (g/L)
Culture time (d)
pH=2
pH=4
pH=6
pH=8
pH=10
(b)
Gravimetric FAME yield (mg/g dry sludge)
Culture time (d)
pH=2
pH=4
pH=6
pH=8
pH=10
(c)
Volumetric FAME yield (g/L)
Gravimetric FAME yield (mg/g dry sludge)
2
4
6
8
10

Fig. S2

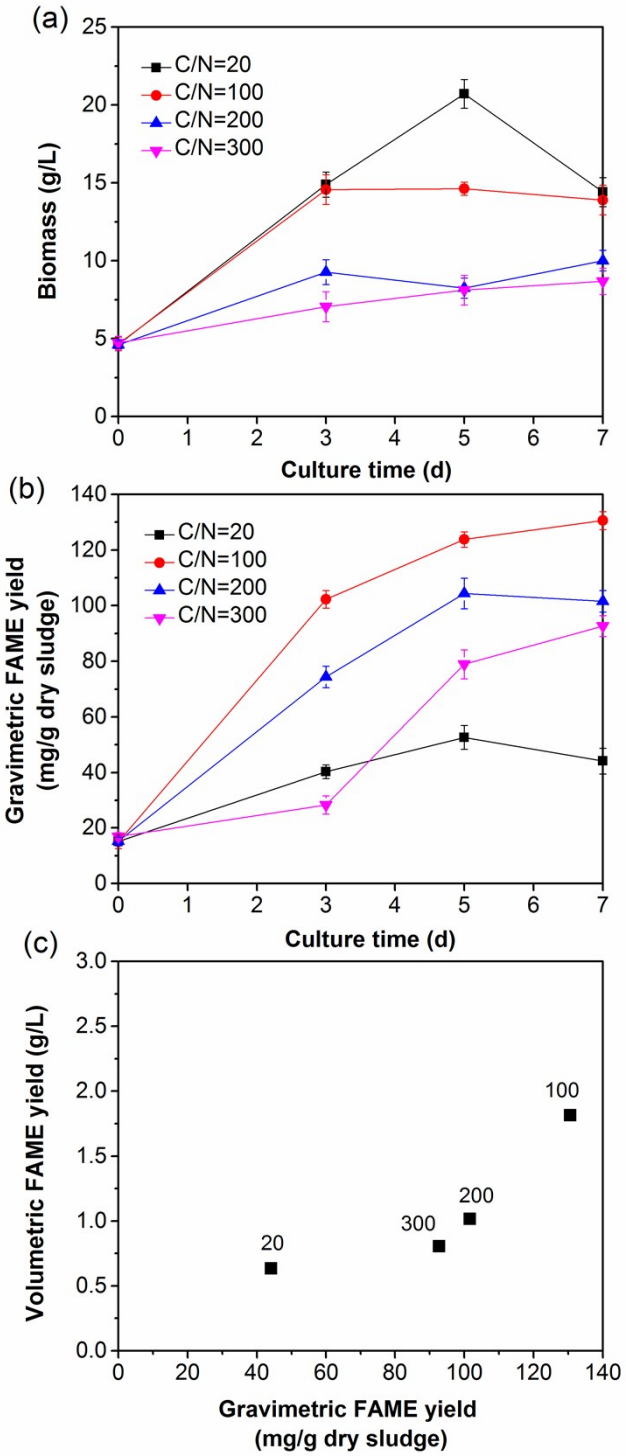

(a)
C/N=20
C/N=100
C/N=200
C/N=300
Biomass (g/L)
Culture time (d)
(b)
C/N=20
C/N=100
C/N=200
C/N=300
Gravimetric FAME yield (mg/g dry sludge)
Culture time (d)
(c)
Volumetric FAME yield (g/L)
Gravimetric FAME yield (mg/g dry sludge)
20
300
200
100

Fig. S3

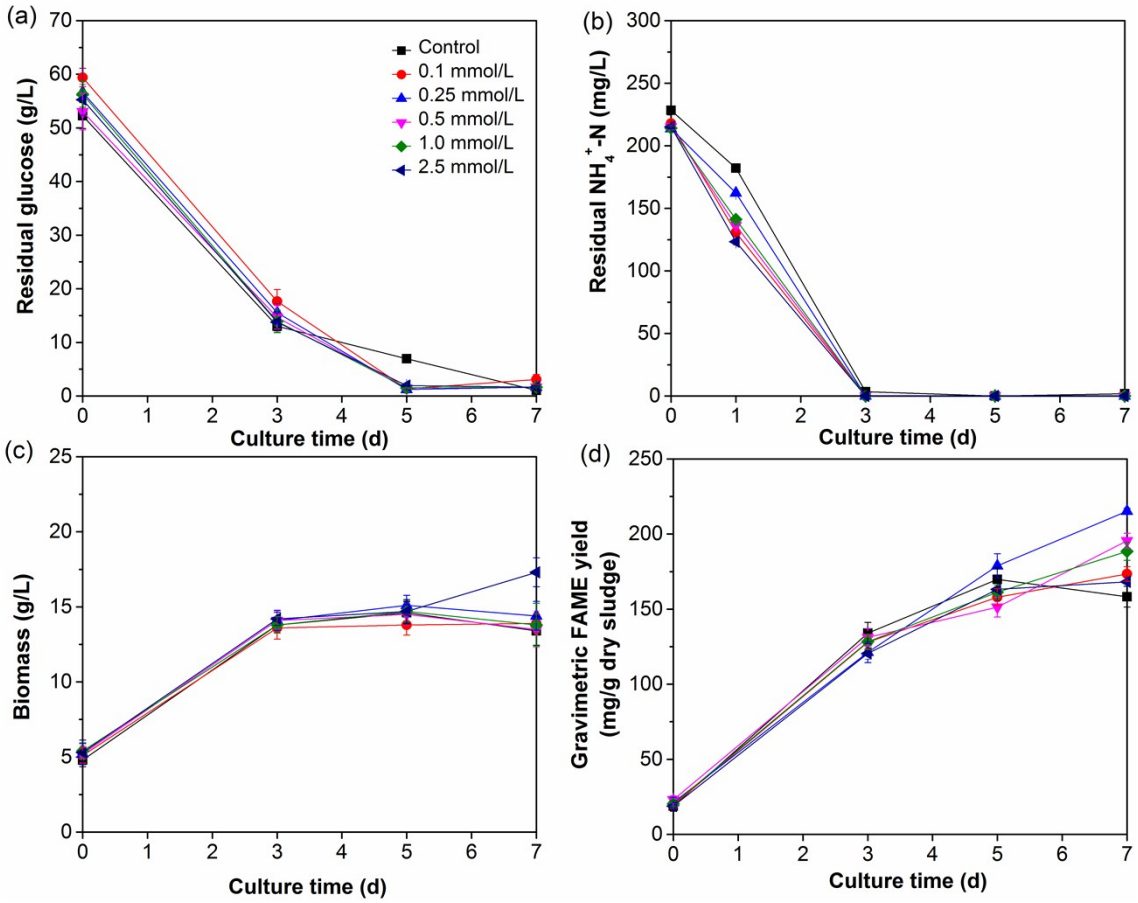
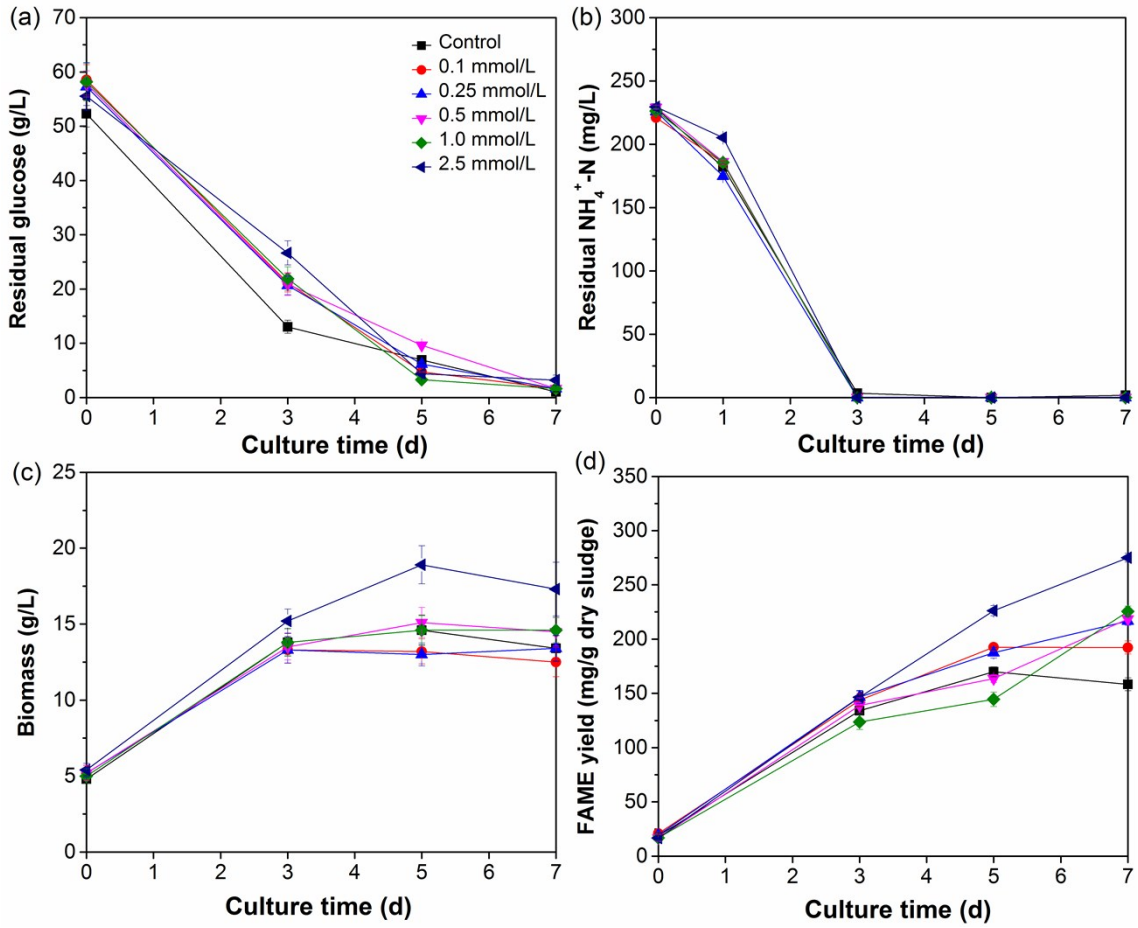

(a)
Residual glucose (g/L)
Culture time (d)
Control
0.1 mmol/L
0.25 mmol/L
0.5 mmol/L
1.0 mmol/L
2.5 mmol/L
(b)
Residual NH4+-N (mg/L)
Culture time (d)
(c)
Biomass (g/L)
Culture time (d)
(d)
Gravimetric FAME yield (mg/g dry sludge)
Culture time (d)

Fig. S4.


(a)
Residual glucose (g/L)
Culture time (d)
Control
0.1 mmol/L
0.25 mmol/L
0.5 mmol/L
1.0 mmol/L
2.5 mmol/L
(b)
Residual NH4+-N (mg/L)
Culture time (d)
(c)
Biomass (g/L)
Culture time (d)
(d)
FAME yield (mg/g dry sludge)
Culture time (d)