

Improved Biological Phosphorus Removal Induced by Oxidic/Extended-Idle Process Using Glycerol and Acetate at Equal Fraction

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Materials and Methods

Table S1. Oligonucleotide probes used in this study

Probe	Sequence5'-3'	Specificity	Reference
PAO462	CCG TCA TCT ACW CAG GGT ATT AAC	Most <i>Accumulibacter</i>	Crocetti et al. (2000)
PAO651	CCC TCT GCC AAA CTC CAG	Most <i>Accumulibacter</i>	Crocetti et al. (2000)
PAO846	GTT AGC TAC GGC ACT AAA AGG	Most <i>Accumulibacter</i>	Crocetti et al. (2000)
EUB338-I	GCT GCC TCC CGT AGG AGT	Most bacteria	Amann et al. (1995)
EUB338-II	GCA GCC ACC CGT AGG TGT	<i>Planctomycetales</i>	Daims et al. (1999)
EUB338-III	GCT GCC ACC CGT AGG TGT	<i>Verrucomicrobiales</i>	Daims et al. (1999)
GAOQ431	TCC CCG CCT AAA GGG CTT	Some <i>Competibacter</i>	Crocetti et al. (2002)
GAOQ989	TTC CCC GGA TGT CAA GGC	Some <i>Competibacter</i>	Crocetti et al. (2002)
GB_G2	TTCCCCAGATGTCAAGGC	Some <i>Competibacter</i>	Kong et al. (2002)
TFO-DF218	GAA GCC TTT GCC CCT CAG	' <i>Defluviicoccus</i> '-related organisms	Wong et al. (2004)
TFO-DF618	GCC TCA CTT GTC TAA CCG	' <i>Defluviicoccus</i> '-related organisms	Wong et al. (2004)
DF988	GAT ACG ACG CCC ATG TCA AGG G	' <i>Defluviicoccus</i> '-related organisms	Meyer et al. (2006)
DF1020	CCG GCC GAA CCG ACT CCC	' <i>Defluviicoccus</i> '-related organisms	Meyer et al. (2006)

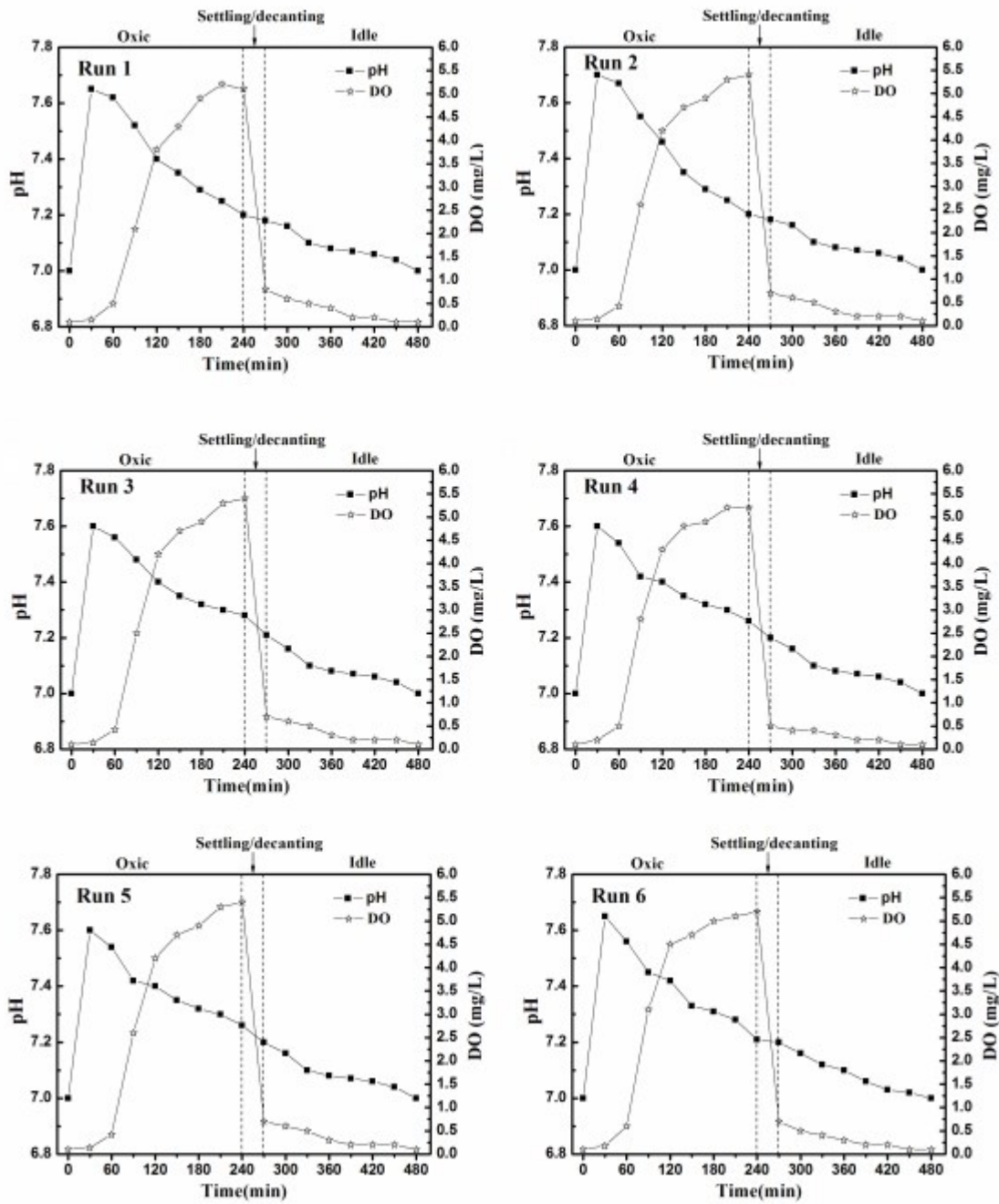


Figure S1. Profiles of pH and DO variations during a typical cycle of each Run in the O/EI reactor.

Supplementary Reference

- Amann, R., Ludwig, W., Schleifer, K.H., 1995. Phylogenetic identification and in situ detection of individual microbial cells without cultivation. *Microbiol. Rev.* 59 (1): 143-169.
- Crocetti, G.R., Hugenholtz, P., Bond, P.L., Schuler, A., Keller, J., Jenkins, D., Blackall, L.L., 2000. Identification of polyphosphate-accumulating organisms and design of 16S rRNA-directed probes for their detection and quantitation. *Appl. Environ. Microbiol.* 66 (3): 1175-1182.
- Crocetti, G.R., Banfield, J.F., Keller, J., Bond, P.L., Blackall, L.L., 2002. Glycogen-accumulating organisms in laboratory-scale and full-scale wastewater treatment processes. *Microbiol.* 148 (Pt 11): 3353-3364.
- Daims, H., Bruhl, A., Amann, R., Schleifer, K.H., Wagner, M., 1999. The domain-specific probe EUB338 is insufficient for the detection of all bacteria: development and evaluation of a more comprehensive probe set. *Syst. Appl. Microbiol.* 22 (3): 434-444.
- Kong, Y.H., Say, Ong, S.L., Ng, W.J., Liu, W.T., 2002. Diversity and distribution of a deeply branched novel proteobacterial group found in anaerobic-aerobic activated sludge processes. *Environ. Microbiol.* 4 (11): 753-757.
- Meyer, R.L., Saunders, A.M., Blackall, L.L., 2006. Putative glycogen-accumulating organisms belonging to the *Alphaproteobacteria* identified through rRNA-based stable isotope probing. *Microbiol.* 152 (Pt 2): 419-429.
- Wong, M.T., Tan, F.M., Ng, W.J., Liu, W.T., 2004. Identification and occurrence of tetrad-forming *Alphaproteobacteria* in anaerobic-aerobic activated sludge processes. *Microbiol.* 150 (Pt 11): 3741-3748.