Short Communication

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Abstract

This paper presents the results of an extended ASM2 model for the modelling and calibration of the role of extracellular polymeric substances (EPS) in phosphorus (P) removal in an anaerobic-aerobic process. In this extended ASM2 model, two new components, the bound EPS (X_{EPS}) and the soluble EPS (S_{EPS}), are introduced. Compared with the ASM2, 7.71, 8.53, and 9.28% decreases in polyphosphate (polyP) were observed in the extended ASM2 in three sequencing batch reactors feeding with different COD/P ratios, indicating that 7.71-9.28% of P in the liquid was adsorbed by EPS. Sensitive analysis indicated that, five parameters were the significant influential parameters and had been chosen for further model calibration by using the least square method to simulate by MATLAB. This extended ASM2 has been successfully established to simulate the output variables and provides a useful reference for the mathematic simulations of the role of EPS in biological phosphorus removal process.

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