

C617540: MAJOR ENVIRONMENTAL ENGINEERING

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PHITSANU BOONYAPHAK : A STUDY OF KINETIC PARAMETERS IN THE MULTI-STAGE ACTIVATED SLUDGE PROCESS.

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The propose of this research is to study the possibility of using kinetic parameters of dormitory wastewater obtaining from a bench-scale model of single continuous stirred tank reactors with cell recycle (CSTRWR) to predict the performance of multi-stage activated sludge process. By comparison between the prediction values from the mathematical model and the experimental results.

By using a single CSTRWR bench-scale model to treat raw dormitory wastewater, it was found that kinetic parameters $K_s = 12.3916$ mg./l. , $\mu_m = 0.0582$ hr.⁻¹ , $Y_g = 0.2940$ and $b = 0.0027$ hr.⁻¹ .

Using these kinetic parameters to predict the performance of the 4-stage activated sludge process for 3 difference wastewater feeding methods, namely plug flow, step feed and contact-stabilized, it was found that the prediction of filtrate COD and MLSS in each tank for all type of the process are almost the same as the experimental results, with the mean of difference between the prediction value and the mean from steady state of experimental results about 15%

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