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Initial stage of an upflow anaerobic sludge blanket (UASB) reactor start-up

Tan Yee Ying @ Jennifer, Mohd. Ali Hashim, Kadathur B. Ramachandran

Department of Chemical Engineering, Faculty of Engineering, University of Malaya, Lembah Pantai, 50603 Kuala Lumpur.

E-mail: jccyytan@hotmail.com

The upflow anaerobic sludge blanket (UASB) reactor has been the most successful anaerobic wastewater treatment reactor developed to date. Compared to other anaerobic treatment systems, it offers high chemical oxygen demand (COD) removal efficiency at shorter retention times, small land area requirement, low construction cost, simple operation and minimal pumping requirement. However, the successful operation of this system requires careful start-up, in order to ensure proper sludge granulation in the reactor. This paper reports the approach taken in starting up an UASB reactor to be developed to treat domestic wastewater. Its performance during the initial start-up stages will be presented and relevant observations highlighted. Results obtained to date showed a certain degree of tolerance for deviations from the general strategies outlined for a proper start-up.