Batch influences of exogenous hydrogen on both acidogenesis and methanogenesis of excess sludge

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ABSTRACT:

Methane (CH_4) recovery from excess sludge plays an important role in wastewater treatment aimed at achieving carbon neutrality. Besides pretreatment for excess sludge, exogenous CO_2 and even H_2 have already been tested in enhancing CH_4 production from anaerobic digestion (AD). However, exogenous H_2 injected into AD might simultaneously influence both upstream acidogenesis and downstream methanogenesis. In this study, a series of batch tests were conducted to ascertain the influences of hydrogen partial pressure (P_{H_2}) on these two processes. Interestingly, the batch tests