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Biohydrogen production in an anaerobic baffled stacking reactor: recirculation strategy and substrate concentration effects

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Highlights

- Hydrogen production bacteria were accumulated at these recirculation strategies.
- The optimal recirculation strategy could increase the disturbance efficiency.
- The kinetic parameters of V_{\max} and K_s were obtained using the modified Andrew model.

Abstract

This study designs a new type of anaerobic bioreactor based on prefabricated building wastewater treatment facility and plug flow bioreactor structures. This new reactor is named the anaerobic baffled stacking reactor (ABSR). The ABSR is divided into three reaction chambers. A liquid pump is established to recirculate the liquid in the second or third chambers to the first or

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