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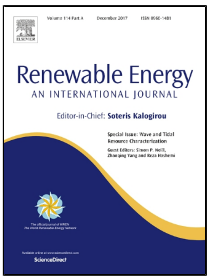

Biomethane generation in an AnSBBR treating effluent from the biohydrogen production from vinasse: optimization, metabolic pathways modeling and scale-up estimation

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BIOMETHANE GENERATION IN AN AnSBBR TREATING EFFLUENT FROM THE BIOHYDROGEN PRODUCTION FROM VINASSE: OPTIMIZATION, METABOLIC PATHWAYS MODELING AND SCALE-UP ESTIMATION

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HIGHLIGHTS

- CH_4 production in AnSBBR from effluent of H_2 production (two-stage system);
- Gas quality and quantity: 85% of methane with a productivity of 133 $molCH_4.m^{-3}.d^{-1}$;
- CH_4 is produced via acetoclastic route based on kinetic model;
- Energy production of two-stage system: 13.6 $kJ.gCOD^{-1}$ (39% higher than one-stage);
- Scale up estimation resulted in 4 reactors in parallel, each one with 1720 m^3.