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IMPROVEMENT OF HYDROGEN PRODUCTION BY BIOLOGICAL ROUTE USING REPEATED BATCH CYCLES

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Highlights

- 1) Hydrogen produced by dark fermentation based on repeated-batch cycles
- 2) Extension superior to 900 h was succeeded with alternated cycles of sugars
- 3) Maximum H₂ yield (3.4 mol H₂/mol hexose) resulted from alternated addition of sugars
- 4) Maximum hydrogen productivity was 168.27 mmol H₂/L/day in 24 h of process
- 5) Microorganisms followed the butyric-type fermentation

Abstract

Hydrogen is considered a very clean energy source, since its combustion releases mainly water as a reaction product. Besides, it has the advantage of having the highest energy density when compared to any other fuel. This work studied the hydrogen production applying dark fermentation by a heat shock pre-treated microbial

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