Effects of hydrogen partial pressure on fermentative biohydrogen production by a chemotrophic Clostridium bacterium in a new horizontal rotating cylinder reactor

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Conclusions

The maximum hydrogen yield was obtained at pH 5.2 while acetate and butyrate are the major sub-products (typical of Clostridium fermentation).

Hydrogen partial pressure needs to be reduced by removing the gas from the liquid, in order to limit the inhibition on hydrogen production. The measure of the hydrogen concentration in the media needs to be investigated in order to quantify the effects.

pH may be efficiently controlled at optimal level by adjusting glucose concentration in the feed media, without other pH regulation system.

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