

## Accepted Manuscript

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PII: S0960-8524(18)31156-8

DOI: <https://doi.org/10.1016/j.biortech.2018.08.052>

Reference: BITE 20335

To appear in: *Bioresource Technology*

Received Date: 13 June 2018

Revised Date: 13 August 2018

Accepted Date: 14 August 2018

Please cite this article as: Giménez, J.B., Bouzas, A., Carrere, H., Steyer, J-P., Ferrer, J., Seco, A., Assessment of cross-flow filtration as microalgae harvesting technique prior to anaerobic digestion: evaluation of biomass integrity and energy demand, *Bioresource Technology* (2018), doi: <https://doi.org/10.1016/j.biortech.2018.08.052>

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# Assessment of cross-flow filtration as microalgae harvesting technique prior to anaerobic digestion: evaluation of biomass integrity and energy demand.

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## Abstract

In the present study, the effect of cross-flow filtration (CFF) on the overall valorization of *Chlorella spp.* microalgae as biogas was assessed. The effect of CFF on microalgae cell integrity was quantified in terms of viability which was correlated with the anaerobic biodegradability. The viability dropped as the biomass concentration increased, whereas anaerobic biodegradability increased linearly with the viability reduction. It was hypothesized that a stress-induced release and further accumulation of organic polymers during CFF increased the flux resistance which promoted harsher shear-stress conditions. Furthermore, the volume reduction as the concentration increased entailed an increase in the specific energy supply to the biomass. The energy

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