

# Acetic acid from lignocellulosic biomass pretreatment

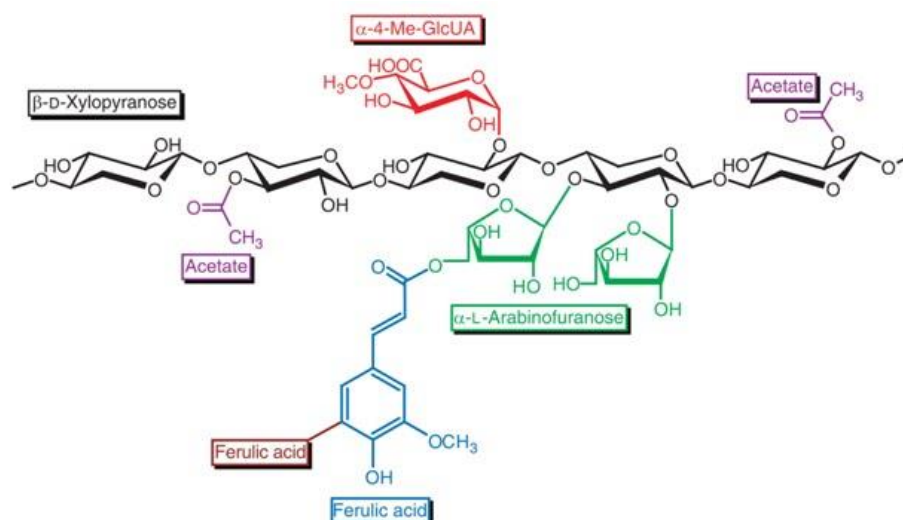
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<b>Project Term</b>	July 2016 – January 2021
<b>Financed by</b>	BE-Basic

## Project Description

To recover fermentable sugars (mostly glucose) from lignocellulose biomass, the feedstock needs to be submitted to a pretreatment step. During pretreatment, a selective and effective separation of the main fractions present in lignocellulose biomass is of great interest, especially when fermentation processes will be subsequently performed, because the by-products formed during pretreatment may inhibit the microorganism performance during fermentation, affecting the sugars conversion to product. The great importance of the pretreatment step consists also in the fact that it makes the cellulose polymer more accessible for further conversion to fermentable sugars, which is usually done by using cellulase enzyme cocktails.

Lignocellulosic biomass can contain up to 5% acetate ester groups. Acetic acid is liberated during pretreatment. Conventionally, acetic acid is seen as nuisance and waste in later process steps. This project develops a pretreatment process such that pure acetic acid can be recovered. Such acetic acid might replace petrochemically produced acetic acid, which is an important base chemical.

Besides lab scale tests, pilot tests of biomass pretreatment have also been performed at the Bioprocess Pilot Facility.



## Publications

J.M. Jimenez-Gutierrez, L.A.M. van der Wielen, A.J.J. Straathof, Subcritical CO<sub>2</sub> shows no effect on liquid hot water pretreatment of poplar wood. *Bioresour. Technol. Rep.*, 11, 2020, 100442. <https://doi.org/10.1016/j.biteb.2020.100442>

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