Nueva publicación científica "Engineering aspects of hydrothermal pretreatment: From batch to continuous operation, scale-up and pilot reactor under biorefinery concept"

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Highlights:

- Engineering aspects of hydrothermal pretreatment are presented.
- Hydrothermal pretreatment stage plays an important role in the biorefinery concept.
- Hydrothermal pretreatment and their effect on biomass structure.
- Operation mode in batch and continuous of hydrothermal pretreatment are discuses.

Abstract:

Different pretreatments strategies have been developed over the years mainly to enhance enzymatic cellulose degradation. In the new biorefinery era, a more holistic view on pretreatment is required to secure optimal use of the whole biomass. Hydrothermal pretreatment technology is regarded as very promising for lignocellulose biomass fractionation biorefinery and to be implemented at the industrial scale for biorefineries of second generation and circular bioeconomy, since it does not require no chemical inputs other than liquid water or steam and heat. This review focuses on the fundamentals of hydrothermal pretreatment, structure changes of biomass during this pretreatment, multiproduct strategies in terms of biorefinery, reactor technology and engineering aspects from batch to continuous operation. The treatise includes a case study of hydrothermal biomass pretreatment at pilot plant scale and integrated process design.

Graphical Abstract:

Imágen esquemática sobre el proceso del pretratamiento hidrotermal.

Enlaces relacionados

- https://www.sciencedirect.com/science/article/abs/pii/S0960852419319145