Greener pretreatment approaches for the valorisation of natural fibre biomass into bioproducts

ABSTRACT

The utilization of lignocellulosic biomass in various applications has a promising potential as advanced technology progresses due to its renowned advantages as cheap and abundant feedstock. The main drawback in the utilization of this type of biomass is the essential requirement for the pretreatment process. The most common pretreatment process applied is chemical pretreatment. However, it is a non-eco-friendly process. Therefore, this review aims to bring into light several greener pretreatment processes as an alternative approach for the current chemical pretreatment. The main processes for each physical and biological pretreatment process are reviewed and highlighted. Additionally, recent advances in the effect of different non-chemical pretreatment approaches for the natural fibres are also critically discussed with a focus on bioproducts conversion.

Keyword: Non-chemical pretreatment; Lignocellulosic biomass; Bioproducts