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Characterization of spent sulfite liquor and its valorisation using Aspen Plus® simulation software

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Lignocellulosic waste materials represent one of the most promising sources of renewable resources to give useful products, due to their low economic value and high availability. In this sense, pulp and paper industries are perfect candidates to transform traditional pulp mills into modern biorefineries. In this work, the simulation process of the use of spent liquor from a sulphite pulp mill into biofuels and/or other products is studied. In order to fulfil this objective, the total characterisation of the liquor is obtained and the simulation of the entire plant is carried out by means of Aspen Plus® software and taking into account previous experimental results. Spent liquor consists mainly of lignosulphonates and phenolics from the lignin and sugar and other inhibitors from the hemicellulose. Different fractionation/detoxification methods can be used to separate both fractions; however, depending on the final fermentation step, the separation processes can vary.

Biography

Alberto Coz works as an Associate Professor at the University of Cantabria, Spain, and as an international relations manager in the School of Nautical Studies. His research interests are in the areas of biorefinery, waste valorisation in biofuels, bioproducts and ceramics as well as industrial waste characterisation and leaching behavior. He has worked in the direction and collaboration in Research and Development Projects at International, European and National level as well as transference results projects with the industrial sector. He has participated in 41 SCI papers, 1 invention patent, 111 international congresses and the supervision of 4 PhD dissertations.

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