

Biorefinery concept with green solvents towards the phenolic valorization

Rafał Bogel-Lukasik

Laboratório Nacional de Energia e Geologia, Unidade de Bioenergia, 1649-038 Lisboa, Portugal, e-mail: rafal.lukasik@lneg.pt

Abstract

The efficient separation, hydrolysis and conversion of principal components of lignocellulosic biomass allows to produce chemicals and value added compounds.

Ionic liquids (ILs) have been used for the pre-treatment and fractionation of biomass.¹⁻³

The pre-treatment reveals that phenolic compounds were found in the IL phase.

This work was devoted for the extraction of phenolic compounds from the recovered IL liquid using several adsorption resins in small scale batch processes. Phenolic compounds, such as vanillin, catechol and flavonoids were identified in extraction samples and also quantified. Temperature, residence time and water amount were evaluated in order to find optimal extraction conditions of phenolic compounds from IL.

1. A. M. da Costa Lopes, K. G. Joao, E. Bogel-Lukasik, L. B. Roseiro and R. Bogel-Lukasik, *J. Agr. Food Chem.*, 2013, **61**, 7874-7882.
2. A. M. da Costa Lopes, K. João, D. Rubik, E. Bogel-Lukasik, L. C. Duarte, J. Andreaus and R. Bogel-Lukasik, *Bioresource Technol.*, 2013, **142**, 198-208.
3. S. P. Magalhães da Silva, A. M. da Costa Lopes, L. B. Roseiro and R. Bogel-Lukasik, *RSC Adv.*, 2013, **3**, 16040-16050.