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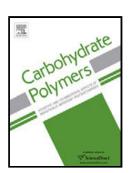
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ACCEPTED MANUSCRIPT

1	Adsorption of lignocelluloses of pre-hydrolysis liquor on calcium carbonate to induce
2	functional filler
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11	
12	Abstract
13	In this work, we aimed at adsorbing the oligo-sugars of prehydrolysis liquor on precipitated
14	calcium carbonate (PCC) to produce modified PCC. The results showed that the adsorptions of
15	oligo-sugars, lignin and furfural were greater on porous PCC (PCC2) than on nano-sized PCC
16	(PCC1) due to the larger surface area of PCC2. The adsorption reached its maximum in 5 h on
17	PCC1, but it gradually increased on PCC2 due to the diffusion of oligo-sugars and lignin into the
18	pores of PCC2. Also, the experimental isotherm and kinetic results were well fitted into
19	Langmuir and pseudo-second order models, respectively. The adsorption was greater at a lower
20	temperature (i.e. 40 °C) and pH (i.e. 7). Alternatively, cationic poly acrylamide (CPAM) was
21	added to the PHL/PCC system, which led to more promising results (than that to PHL/PCC
22	system) with the maximum lignocelluloses adsorption of 0.36 g/g on PCC2, among which 0.22
23	g/g was oligo-sugars.
24	
25	Keywords: PCC, PHL, Hemicelluloses, Adsorption, Filler, Biorefinery
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28	
29	1. Introduction
30	Today, kraft technology is widely used for producing dissolving pulp. In this process, wood
31	chips are treated with steam in a pre-hydrolysis stage, which removes a part of hemicelluloses

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