

Accepted Manuscript

Title: Acid-catalyzed hydrolysis of conifer lignosulfonate in black liquor for the production of value-added chemicals

Authors: Guiyu Zhang, Yeqian Wen, Zhihua Liu, Songmei Zhang, Gang Li



PII: S0926-860X(17)30194-1
DOI: <http://dx.doi.org/doi:10.1016/j.apcata.2017.05.004>
Reference: APCATA 16226

To appear in: *Applied Catalysis A: General*

Received date: 22-1-2017
Revised date: 30-4-2017
Accepted date: 6-5-2017

Please cite this article as: Guiyu Zhang, Yeqian Wen, Zhihua Liu, Songmei Zhang, Gang Li, Acid-catalyzed hydrolysis of conifer lignosulfonate in black liquor for the production of value-added chemicals, *Applied Catalysis A, General* <http://dx.doi.org/10.1016/j.apcata.2017.05.004>

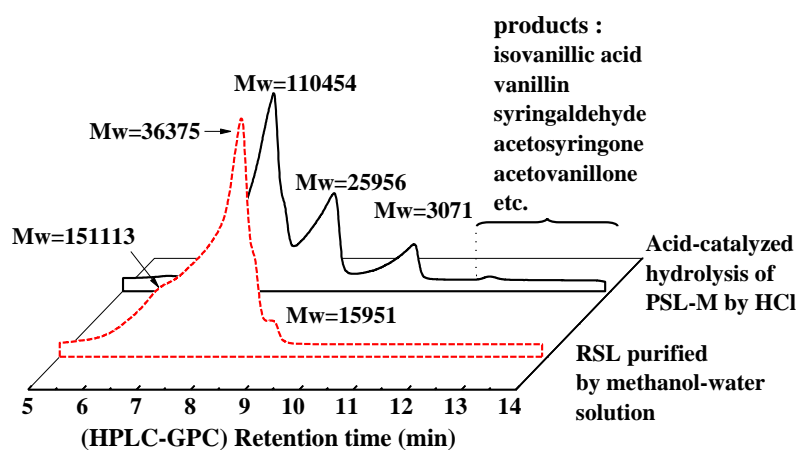
This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Acid-catalyzed hydrolysis of conifer lignosulfonate in black liquor for the production of value-added chemicals

Guiyu Zhang, Yeqian Wen*, Zhihua Liu, Songmei Zhang, Gang Li*

Hebei Provincial Key Lab of Green Chemical Technology & High Efficient Energy Saving, School of Chemical Engineering and Technology, Hebei University of Technology, Tianjin, 300130, China.

Graphical abstracts



Highlights

- 1. Purification of commercial lignosulfonate by methanol-water solution
- 2. Aggregation behaviors of lignosulfonate
- 3. New explanation of the effect of inorganic acids to lignosulfonate
- 4. Production of low molecular weight value-added chemicals, *i. e.* isovanillic acid, vanillin, syringaldehyde, acetosyringone, acetovanillone.

Abstract

Commercial sodium lignosulfonate from conifer black liquor (RSL) was used in our study to investigate acid-catalyzed hydrolysis of lignosulfonate (LS) by inorganic acids in aqueous solution. Before the hydrolysis process, RSL was purified by alcohol-water solution. Combustion method and gel permeation chromatography (GPC) of the high performance

* Corresponding authors. Tel.: +86 22 60204870

E-mail addresses: ligang@hebut.edu.cn (G. Li), wenyq1983@163.com (Yeqian Wen)

Download English Version:

<https://daneshyari.com/en/article/4755643>

Download Persian Version:

<https://daneshyari.com/article/4755643>

[Daneshyari.com](https://daneshyari.com)