

Accepted Manuscript

Synthesis and characterization of flower-like carbon spheres solid acid from glucose for esterification

Yi Li, Danlin Zeng

PII: S0167-577X(17)30081-2
DOI: <http://dx.doi.org/10.1016/j.matlet.2017.01.071>
Reference: MLBLUE 22024

To appear in: *Materials Letters*

Received Date: 24 November 2016
Revised Date: 9 January 2017
Accepted Date: 18 January 2017

Please cite this article as: Y. Li, D. Zeng, Synthesis and characterization of flower-like carbon spheres solid acid from glucose for esterification, *Materials Letters* (2017), doi: <http://dx.doi.org/10.1016/j.matlet.2017.01.071>

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.



Synthesis and characterization of flower-like carbon spheres solid acid
from glucose for esterification

Yi Li, Danlin Zeng*

*The Archives of Wuhan University of Science and Technology, Hubei Key Laboratory of Coal Conversion and
New Carbon Material, School of Chemistry and Chemical Engineering, Wuhan University of Science and
Technology, Wuhan 430081, China*

Abstract: A novel flower-like carbon spheres solid acid was prepared from glucose by the simple hydrothermal method. The characterization results show that $\text{-SO}_3\text{H}$ groups are covalently linked on the carbon spheres solid acid in sulfonation process, which enhanced acid strength and acid densities of the solid acid catalyst. The flower-like shape derived from the preparation process also increases the surface area of the catalysts and the accessibility of the active sites. The catalytic performance results indicate that the carbon spheres solid acid is an excellent catalyst for esterification reaction.

Keywords: carbon spheres; solid acid; carbon materials; biomaterials; esterification

* Corresponding author.

E-mail addresses: zdanly@163.com (D. Zeng).

1. Introduction

Liquid acid has been extensively used in the acid catalyzed reaction. While considering its high toxicity, serious corrosiveness and poor recyclability, this kind of catalyst has been greatly limited in the modern chemical industry applications.

Download English Version:

<https://daneshyari.com/en/article/5464066>

Download Persian Version:

<https://daneshyari.com/article/5464066>

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