

Accepted Manuscript

Title: Cellulosic Cr(salen) complex as an efficient and recyclable catalyst for copolymerization of SO₂ with epoxide

Authors: Yunfei Zhi, Xuefan Deng, Yonghao Ni, Wenbo Zhao, Qingming Jia, Shaoyun Shan



PII: S0144-8617(18)30409-0
DOI: <https://doi.org/10.1016/j.carbpol.2018.04.031>
Reference: CARP 13485

To appear in:

Received date: 4-12-2017
Revised date: 20-2-2018
Accepted date: 6-4-2018

Please cite this article as: Zhi, Yunfei., Deng, Xuefan., Ni, Yonghao., Zhao, Wenbo., Jia, Qingming., & Shan, Shaoyun., Cellulosic Cr(salen) complex as an efficient and recyclable catalyst for copolymerization of SO₂ with epoxide. *Carbohydrate Polymers* <https://doi.org/10.1016/j.carbpol.2018.04.031>

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.

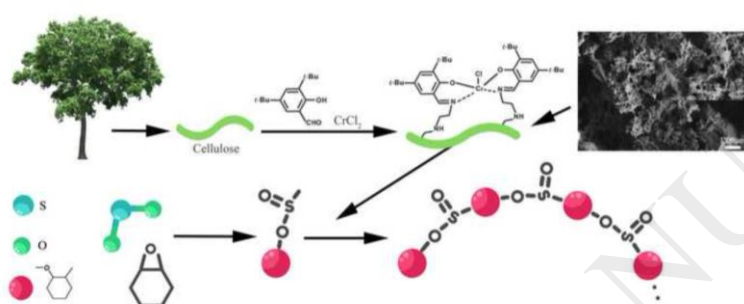
Cellulosic Cr(salen) complex as an efficient and recyclable catalyst for copolymerization of SO₂ with epoxide

Yunfei Zhi^a, Xuefan Deng^a, Yonghao Ni^b, Wenbo Zhao^a, Qingming Jia^{a,b,*}, Shaoyun Shan^{a,b,**}

^aFaculty of Chemical Engineering, Kunming University of Science and Technology, Kunming 650500, China. E-mail:jiaqm411@163.com; Tel:+86 0871 65920206

^bLimerick Pulp and Paper Centre, University of New Brunswick, Fredericton E3B 5A3, Canada

Graphical abstract



Highlights

- Cellulose prepared Salen-type heterogeneous catalyst.
- This catalyst was characterized.
- SO₂ and epoxide were copolymerized by this catalyst.

Abstract:

The search for green catalytic processes for the synthesis of useful polymers and incorporating the waste SO₂ in highly-selective pathways become extremely important in the coming years. Herein, cellulose was modified by ethylenediamine, and then synthesized Schiff base with 3,5-di-tert-butyl-2-hydroxybenzaldehyde to immobilize chromium chloride and formed a novel heterogeneous cellulosic Cr(salen)-type catalyst for the first time. The cellulosic Cr(salen)-type catalyst shows high efficiency and recyclability in copolymerization of cyclohexene oxide with SO₂. The influence factors such as the molar ratio of the catalyst and cyclohexene oxide, reaction temperature, and reaction time were researched in detail to study the optimal

Download English Version:

<https://daneshyari.com/en/article/7782266>

Download Persian Version:

<https://daneshyari.com/article/7782266>

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