

## Accepted Manuscript

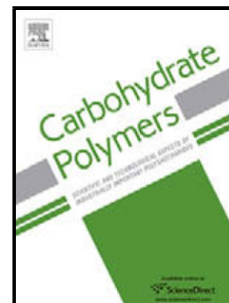
Title: X-ray powder diffraction and other analyses of cellulose nanocrystals obtained from corn straw by chemical treatments

Authors: C.C. Hernandez, F.F. Ferreira, D.S. Rosa

PII: S0144-8617(18)30351-5

DOI: <https://doi.org/10.1016/j.carbpol.2018.03.085>

Reference: CARP 13435



To appear in:

Received date: 9-1-2018

Revised date: 19-3-2018

Accepted date: 25-3-2018

Please cite this article as: Hernandez, CC., Ferreira, FF., & Rosa, D.S., X-ray powder diffraction and other analyses of cellulose nanocrystals obtained from corn straw by chemical treatments. *Carbohydrate Polymers* <https://doi.org/10.1016/j.carbpol.2018.03.085>

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.

# X-ray powder diffraction and other analyses of cellulose nanocrystals obtained from corn straw by chemical treatments

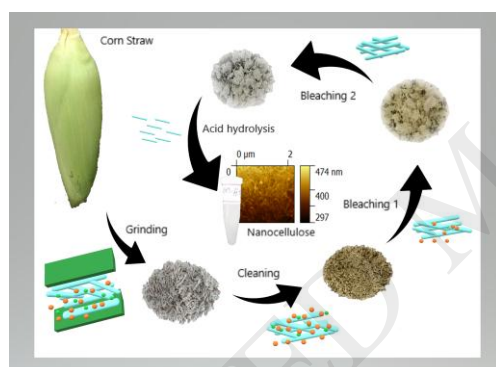
C. C. Hernandez<sup>1</sup>, F. F. Ferreira<sup>2</sup>, D. S. Rosa<sup>1\*</sup>

<sup>1</sup>Universidade Federal do ABC (UFABC), Centro de Engenharia, Modelagem e Ciências Sociais Aplicadas, <sup>2</sup>Universidade Federal do ABC (UFABC), Centro de Ciências Naturais e Humanas, Avenida dos Estados, 5001, Santo André, São Paulo, Brazil

\* Phone: +55 (11) 99302-3344

E-mail: dervalrosa@yahoo.com.br

Graphical abstract



Highlights

- Reuse of renewable resources (corn straw residues).
- Cellulose nanocrystals (CNC) obtained from corn straw.
- CNCs were characterized using X-ray diffraction (XRD) in conjunction with the Rietveld method.
- Evaluation of chemical treatments effects in obtaining CNC.
- CNS sizes and morphology depend on pre-treatment used.

**ABSTRACT**

The extraction of nanocellulose from agro-industrial wastes is feasible due to a significant amount of cellulose contained in these natural fibers. The analysis of chemical treatments effects on the fibers to obtain the nanocellulose must be taken into consideration for the definition of an adequate

Download English Version:

<https://daneshyari.com/en/article/7782477>

Download Persian Version:

<https://daneshyari.com/article/7782477>

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