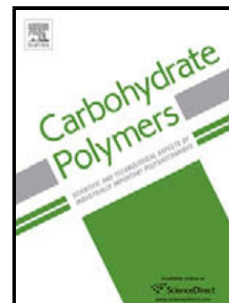


## Accepted Manuscript

Title: Chitosan-based film supported copper nanoparticles: A potential and reusable catalyst for the reduction of aromatic nitro compounds



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PII: S0144-8617(17)30018-8  
DOI: <http://dx.doi.org/doi:10.1016/j.carbpol.2017.01.018>  
Reference: CARP 11896

To appear in:

Received date: 7-11-2016  
Revised date: 4-1-2017  
Accepted date: 4-1-2017

Please cite this article as: de Souza, Jaqueline F., da Silva, Gabriela T., & Fajardo, André R., Chitosan-based film supported copper nanoparticles: A potential and reusable catalyst for the reduction of aromatic nitro compounds. *Carbohydrate Polymers* <http://dx.doi.org/10.1016/j.carbpol.2017.01.018>

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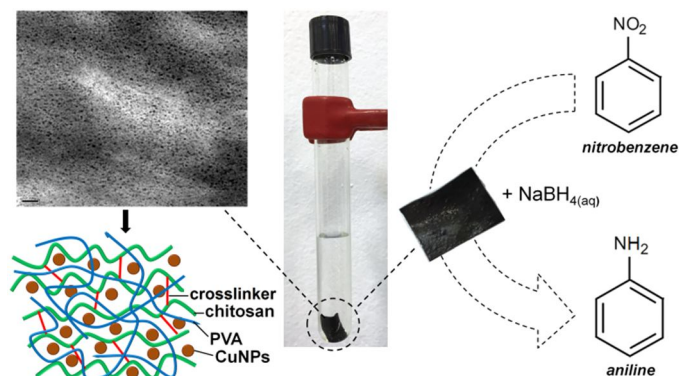
1 **Chitosan-based film supported copper nanoparticles: A potential and**  
 2 **reusable catalyst for the reduction of aromatic nitro compounds**

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7 **Graphical abstract**

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14 **Highlights**

15 >Copper nanoparticles were supported into a chitosan/poly(vinyl alcohol) matrix.

16 >This system enables the catalytic reduction of nitro aromatic compounds.

17 >The energy of activation of this reaction was lower when compared to other catalysts.

18 >The catalytic efficiency was kept even after 6 consecutive reuse cycles.

19 >This novel catalytic system shows several advantages over other metal based catalysts.

20

21 **Abstract**

22 In this study, copper nanoparticles (CuNPs) were synthesized and stabilized into a  
 23 chitosan/poly(vinyl alcohol) (CP) based film using a simple protocol under mild  
 24 conditions. The polymeric matrix utilized in this study allows synthesizing stable  
 25 nanoparticle with narrow size distribution within the film matrix. Further, this system  
 26 showed very attractive properties, such as good mechanical properties, chemical  
 27 resistance, easy handling during use and recovery, relatively low-cost as compared to

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