



SDI Review Form 1.6

Journal Name:	Advances in Research
Manuscript Number:	Ms_AIR_23224
Title of the Manuscript:	Equilibrium Isotherm Study for Removal of Mn (II) from Aqueous Solutions by Using Novel Bioadsorbent Tinospora cordifolia
Type of the Article	Original Research Articles

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	<p>Remarks</p> <p>Abstract</p> <p>The use of microbial and plant biomass for the detoxification of industrial effluents for environmental protection and recovery of valuable metals offers a potential alternative to existing treatment technologies</p> <p>R: A potential alternative for which side or point of view</p> <p>This research, <u>study</u> the removal of manganese from water</p> <p>R: English mistake</p> <p>at the room temperature ($27 \pm 2^\circ\text{C}$)</p> <p>R: is this temperature so critical like this ?</p> <p>The results obtained indicated that $1.0\text{gm } 50\text{mL}^{-1}$ adsorbent</p> <p>R: what this values mean ($1.0\text{gm } 50\text{mL}^{-1}$)?</p> <p>The size of the adsorbent particle was $1.18\mu\text{m}$</p> <p>R: how you determine the size $1.18\mu\text{m}$</p> <p>The optimum pH value for Mn(II) adsorption onto the biomass <i>T. cordifolia</i> was found to be 4.0.</p> <p>R: at pH = 4 the bio-materials positively charged and M(II) is also positive so this situation is not good to uptake the ions from water</p> <p>The characterization of the biomass <i>T. cordifolia</i> was done by FTIR.</p> <p>R: what was the interest of the FTIR</p> <p>Keywords: Manganese (II), Biosorption, Coal mine waste water, FTIR</p> <p>R : not well selected</p> <p>Introduction</p> <p>At present, a number of technologies can be used to remove heavy metals from the contaminated waste water such as filtration, adsorption, chemical precipitation, ion exchange,</p>	<p>Respected Sir/Madam,</p> <p>I agree that there is some corrections and grammar mistakes in my paper. In my side, try to correct the paper.</p> <p>R: In my experimental work the temperature are maintained at ($27 \pm 2^\circ\text{C}$) and the adsorbent show the good uptake capacity in this temperature.</p> <p>R: $1.0\text{gm } 50\text{mL}^{-1}$ it mean that 1gm of adsorbent in 50 ml of 200mgL^{-1} Mn(II) containing solution.</p> <p>R: I determine the size of the particle by using different size of sieves.</p> <p>R: Maximum adsorption at acidic pH indicates that low pH leads to an increase in H^+ ions on the adsorbent surface, resulting in significantly strong electrostatic attraction between positively charged surface and manganese ions.</p> <p>R: I include the FTIR interests in my abstract</p> <p>R: I correct that keywords.</p> <p>R: I correct that paragraph.</p>



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	<p>membrane separation and electro remediation methods. However, most of this method might not be efficient in removing heavy metals at very low concentrations, and could be relatively expensive.</p> <p>R: you mentioned adsorption as technology to remove heavy metals and your method is also adsorption so what is the difference between your adsorption and the other</p> <p>In the present investigation, the potential of a plant biomass has been assessed for the removal of manganese ion. The effects of various parameters have been studied and the results are presented in this paper.</p> <p>R:The biomass was used to remove heavy metals a long time ago . The majorities of natural biomass plants fibers contain the chemical functions (-OH, C=O, NH₂, COO, etc) so all play the same role by complexation of positive ions</p> <p>In conclusion you don't provide new scientific work</p> <p>Examples</p> <p>1- Beom-Goo Lee & Roger M. Rowell Removal of Heavy Metal Ions from Aqueous Solutions Using Lignocellulosic Fibers Journal of Natural Fibers <u>Volume 1, Issue 1</u>, 2004, pages 97-108</p> <p>2- C. Fallico, S. Troisi, A. Molinari, and M. F. Rivera. Characterization of broom fibers for PRB in the remediation of aquifers contaminated by heavy metals Biogeosciences, 7, 2545–2556, 2010</p> <p>3- Jamil Rima, Antoine Ghauch, Marwan Ghaouch Cleaning of water contaminated by heavy metals using beetroot fibers as biofilter: <u>Toxicological & Environmental Chemistry</u> Volume 75, Issue 1-2, March 2000, pages 89-97</p> <p>MATERIALS AND METHOD</p> <p>sieved through 1.18µm mesh</p> <p>R: 1.18µm or mesh?</p> <p>After that, the biomass was stay for 30 minutes with HCl (0.1M) solution.</p> <p>R: the attack by acid should disturb the chemical functions of the natural fibers how you show that the acid does not</p>	<p>R: I agree that the lots of natural biomass plants were used to remove the heavy metals a long time ago. But in my plant <i>Tinospora cordifolia</i> which is very highly efficient to remove many heavy metals such as Cd(II), Ni(II), Cr(II), F and others, related to this some papers are published and some are communicated. This plant is a medicinal herb, easily available and very low cost. If we remove the water and wastewater by using this plant there is no harm in water properties.</p>
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	<p>disturb the biomass?</p> <p>Effect of 121 pH on biosorption</p> <p>R: I have a doubt about this result because when pH is 4 the biomass is positively charged and because the positive charge of the metal the uptake efficiency is not maximum</p> <p>Effect of concentration on the percentage removal of Mn(II)</p> <p>R: between 50 ppm and 500 ppm we cannot observe big differences of the retention efficiency</p> <p>Effect of Contact Time</p> <p>R: I think that the removal phenomena is a complexation reaction between the fibers and the ions so we don't need a long contact time because this reaction is instantaneously so the contact time is so fast</p> <p>COMPARATIVE STUDY OF <i>TINOSPORA CORDIFOLIA</i> WITH OTHER ADSORBENTS</p> <p>R: no need for the comparison because all the natural fibers contain the chemical function and then the uptake efficiency must be similar</p> <p>CONCLUSION</p> <p>-This work is not original. More than several hundred similar work were published a long time ago</p> <p>- Fundamental mistakes are found in the text like pH effect , residential time , bad interpretation</p> <p>-Bad English</p>	<p>R: its 1.18μm.</p> <p>R: The acid treatment was enhance the uptake capacity because when study the fresh biomass and acid treated biomass and compare to both the acid treated biomass was show high efficiency to remove Mn(II).</p> <p>R: Its true that the pH 4 was show the maximum efficiency to remove the Mn(II), it's an experimental result. I discussed in your previous comments.</p> <p>R: According to my literature survey the heavy metal concentration was not more than 500 ppm in the ground water and wastewater. So that's why I am study this range.</p> <p>R: I agree this statement and I mention in my paper that 80% Mn(II) was removed in starting 15-20 minutes.</p> <p>R: Its needed because various adsorbent to remove Mn(II) but my adsorbent uptake capacity is high as compare to other adsorbent.</p> <p>R: The novelty of my work is that I have used novel bioadsorbent <i>T. cordifolia</i>. My work is better than existing work which has been shown in table no. 3</p> <p>Thank you for your valuable remarks and I try to improve my paper.</p>
Minor REVISION comments		
Optional/General comments		