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Journal Name:	International Research Journal of Pure and Applied Chemistry
Manuscript Number:	2013_IRJPAC_5890
Title of the Manuscript:	Removal of Fe(II) from Aqueous Solution by Maize Stalks as a Cheap Biosorbent
Type of the Article	Research Paper

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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SDI Review Form 1.6

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)
<u>Compulsory</u> REVISION comments	The manuscript requires thorough revision. The corrections which have stated below in the general comments on the manuscript should be properly adhered to. GENERAL COMMENTS ON THE MANUSCRIPT. ABSTRACT: The abstract should be a concise summary of the entire investigation carried out and which must include: background, purpose of the research/review, methodology, findings and conclusions. All these should be presented in a concise summary and NOT in the discrete manner the author(s) has presented it. INTRODUCTION: • The first sentence of the introduction should be correctly written as: "Groundwater pollution can result from various sources ranging from natural or geochemical contamination to leaks in pipes and leachates from landfills". • The second sentence of the introduction should be correctly written as "It can be divided into three main contamination	- Some recent papers published in this journal present the abstract directly without any divisions. The abstract is concise and there is no need for this division. - done - done



SDI Review Form 1.6

	categories: by microorganisms, organic compounds and by inorganic (mineral) pollutants”. • In line 8 of the introductory part, the sentence should be written “The contamination of ground water with metals or inorganic pollutants constitutes dangerous environmental problem due to the fact that metals are not biodegradable and can cause severe adverse effects on human health” [1]. • In the first paragraph of page 2 (still under introduction), the sentence in the second line should be correctly written as “Several agricultural waste materials have been studied and developed for the effective removal of heavy metals and some examples are: maize bran [2], coffee husks [3], rice straw [4], sugar peat pulp [5], olive pomace [6], apple wastes [7], palm kernel fibre [8], peanut hull [9], cocoa shell [10], hazelnut husks [11], oak sawdust [12] and grape stalks [13]”. • In the second paragraph of page 2, the first sentence should be properly written as “Maize is an economical crop in Egypt and is cultivated in vast areas of land within the country”. EXPERIMENTAL • In subsection 2.1.1, the word <u>bi-distilled</u> in	- done - done - done
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SDI Review Form 1.6

	the first sentence should correctly be written as “double-distilled and this should be corrected all through the manuscript where it appears.”	- done
	In the fourth line of subsection 2.1.2, the word <u>chopped</u> should be replaced with “grounded”	- done
	The last sentence of subsection 2.1.2 should be correctly written as “The resulting powder was sieved to a particle size of 100µm which was used for the adsorption studies”. Always quote the exact particle size(s) in your further investigations.	- done
	▪ 2.1.3 Adsorption studies	
	The second sentence under this subsection 2.1.3 should be correctly written as “Exactly 50 ml of Fe (II) solution of different concentrations (10-50 mg/L) was put in different beakers and 0.1g of the adsorbent added to each of them and they were subsequently agitated at a stirring rate of 200rpm with a magnetic stirrer for a period of 90 min”.	- done
	In the same subsection 2.1.3, the last sentence of page 2 should be correctly written as “After equilibrium, the final concentration (C_e) was measured spectrophotometrically [14] using absorbance values with Varian Cary 100 (UV-	- done



SDI Review Form 1.6

	Vis) Spectrophotometer and the values compared with the standard (calibration curve)". • In subsection 2.1.3, the second sentence in page 3 should be correctly written as "Blanks containing only distilled water were used for each series of experiments as controls". • The parameter V in equation 2 of page 3 should be expressed in Litres (L) and <u>NOT in (ml)</u>. • <i>RESULTS AND DISCUSSION</i> • In subsection 3.2, the first sentence should be correctly written as "The effect of contact time on the percentage removal of Fe (II) ion from the synthetic aqueous solution was investigated at different initial concentrations of Fe (II) (10-40 mg/L) and the plot is shown in Fig. 2". • In line 5 of subsection 3.2, the sentence should be correctly written as "It is clear from Fig. 2 that the percentage removal decreases with increase in initial concentration of Fe (II) ion". • The last sentence in subsection 3.2 should be correctly written as "This was due to the saturation of the adsorption sites of the	- done - done - done - done
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SDI Review Form 1.6

	adsorbent by the metal ion [15]”. - The caption under Fig. 2 of page 4, the expression <u>adsorbent = 2 g/L</u> in the square bracket should be correctly written as [adsorbent dose = 2 g/L]. <i>* Effect of pH</i> - In subsection 3.3, the last sentence in page 4 should be correctly written as “At lower pH values below this point of zero charge, the hydroxonium ions, H₃O⁺ compete effectively with the Fe (II) cations, thus leading to a decrease in the percentage removal”. - The caption under Fig. 3 of page 5, the expression <u>adsorbent = 2 g/L</u> in the square bracket should be correctly written as [adsorbent dose = 2 g/L]. - In Fig. 4 under page 6, the values for adsorbent dose in the plot ranged from 1 – 5g/L while in the discussion in subsection 3.4, the author(s) stated the range of 0.05- to 0.25g/L as the range studied. The author should state the proper values to avoid conflict. <i>Subsection 3.5 Effect of Stirring Speed</i> - The first sentence in subsection 3.5 should be correctly written as “The effect of agitation speed on Fe (II) adsorption at the adsorbent	- done - done - done - The right values of adsorbent are 1-5 g/L, the other values were used per 50 ml of working solution. The values were corrected. - done
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SDI Review Form 1.6

	dose of 2g/L and initial iron concentration of 20 mg/L at a pH 5 is shown in Fig.5. • <i>Subsection 3.6</i> • The first sentence of subsection 3.6 should be written as “Experiments were performed at different temperatures (23, 33, 43 and 53°C) while keeping the other conditions constant”. • In line 9 of subsection 3.6, The Gibbs energy should be correctly written as “Gibbs free energy” • In defining the various terms under equation 5 of page 7, C_A which was described as the amount of dye adsorbed on the adsorbent of the solution at equilibrium (mol/L) puts a doubt on the originality of the results and discussion. It shows that the author(s) were only changing words from originally published work. Nevertheless, the correct expression should be “C_A is the amount of Fe (II) ion adsorbed on the adsorbent of the solution at equilibrium (mol/L)”. • Under Table 1: The first sentence should be written as “The data in Table 1 shows negative values of ΔG^0 and positive values of ΔH^0 and ΔS^0.” • The 3rd sentence under Table 1 should be correctly written as “The values of ΔG^0 are within the range of -20 and 0kJ/mol indicating that the mechanism of the adsorption process was by physisorption.	- done - done - done - done
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SDI Review Form 1.6

	• The next sentence should also be written as “The positive value of ΔH^0 indicates the presence of an energy barrier in the adsorption process and further reveal an endothermic process [22]. • While the last sentence still under Table 1 should be correctly written as “The positive value of ΔS^0 suggests an increase in randomness at the solid/solution interface”. • <i>Subsection 3.7 Adsorption Isotherms</i> • In line 8 of page 10, the sentence should be correctly written as “Due to the high correlation coefficient obtained from Langmuir plot, the Langmuir model might be suitable for the interpretation of the adsorption data”. • The statement under Equation 8 should be correctly written as “By plotting $\ln q_e$ vs $\ln C_e$ (Fig.9), the values of n and K_F could be evaluated from the slope and intercept, respectively”. • Under section 3.7 you stated that three isotherm models were used in this study (confer 2nd sentence and 2nd to the last sentence of subsection 3.7) but only two isotherms Langmuir and Freundlich could be found in your study. Where is the third isotherm?	- done - done - done - done - After application of the Temkin isotherm, we eliminate the results obtained for it, so only two models were introduced. - three was replaced by two
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SDI Review Form 1.6

	• CONCLUSION • The statement in your second line should be correctly written as "The equilibrium adsorption was attained in less than 90 min". • The 4th sentence should be "The results indicate that the optimum pH for maximum removal of Fe (II) ion is 6.0. • In line 6; the sentence should be "The adsorption capacity corresponding to monolayer coverage is 5.14mg/g according to Langmuir model. • REFERENCES The references should be properly checked to ensure that they conform with the format recommended by Science Domain International. <i>Special Comments</i> The author is not mindful of correct use of Language. There are a lot of grammatical errors and poor presentations of results, which I have correctly done in the general comments.	- done - done - done - ok - We do our best to write the manuscript correctly. Our basic language is the Arabic not the English.
Minor REVISION comments	Minor Revision	
Optional/General comments	The manuscript could be accepted for publication after revision	