



SDI Review Form 1.6

PART 1:

Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	2013_BJAST_3695
Title of the Manuscript:	Kinetic, Isothermal, and Thermodynamic Studies of the Biosorption of Methylene Blue from Synthetic Wastewater using Cow Hooves

General guideline for Peer Review process is available in this link:

<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>

- This form has total 7 parts. Kindly note that you should use all the parts of this review form.



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PART 2: Review Comments

	Reviewer's comment	Author's comment <i>(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)</i>



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Compulsory REVISION comments	I read the manuscript BJASt_3695 „Kinetic, Isothermal, and Thermodynamic Studies of the Biosorption of Methylene Blue from Synthetic Wastewater using Cow Hooves” and I send you below my observations. 1. The aim of paper is in accord with the scope of journal BJASt. 2. The treated material represents a new interesting type of low-cost adsorbent for retention of pollutants from wastewater, especially dyes. 3. I suggest a deep checking of English language: words, expressions, grammatical constructions, etc... before resending the corrected material 4. In my opinion, after careful review, the medium changes, the manuscript can be published. 5. Is needed the standardization of terminology throughout the entire manuscript, as follows: adsorption -biosorption - sorption; adsorbent -	The English Language of the paper has been improved. Terminology has been standardized.. The word biomass has been suitably replaced. All the suggested corrections have been effected. New sets of experiments have been carefully performed on the effect of temperature and concentration on the adsorption of MB by CH. Furthermore, the Langmuir constant K_L has been used to determine the thermodynamic parameters instead of K_e. Though a lot of authors do make use of K_e in the determination of thermodynamic parameters. All Other suggestions and corrections have been effected NOTE: I tried typing in the author’s comments column in other pages but I couldn’t. that is why we have all our comments on this page
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ALL	biosorbent – sorbent- biomaterial 6. Abstract a. Cow Hooves is not a biomass !!! Biomass is a product obtained from fermentation processes b. “isothermal studies” expression is not too good! Must change with: equilibrium studies or something like this. 7.Introduction a. Pg. 1, lines 21-23, I suggest giving up this part and start from " Dyes are used...." b. Pg.2, line 51 “low cost adsorbent” instead of “low cost biomaterials” 8. Materials and methods a. Pg. 2, line 72 ; Give here in parenthesis stands that you will use throughout the paper = CH !!! b. Pg.3, line 75: “A stock solution.....” start as a new paragraph. c. Pg. 3, line 79: Biosorption” – “adsorption” !!!!! Must equalized the notations throughout the entire manuscript! d. Pg.3, line 81: suggestion: “established” instead of “desired”	
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	e. Pg.3, line 83-84: “ after reaching the established agitation time” instead “expiration” f.Pg.3, lines 86-89: after 661nm “, the maximum characteristic wavelength and the concentrations were determined using calibration curve: $A = f(C)$. g. Pg. 3, line 88: “using” instead of “according to” h. Pg.3, line 93: “of” before “MB” i.Pg.3, lines 97-101: suggestion for rewrite the paragraph: <i>The effect of pH on the adsorption of MB was studied by contacting 100 mL solution of MB dye with.... Concentration with 0.25g of CH at 298 K. The values of solution pH were adjusted by adding dilute HCl or dilute NaOH. The pH value for whom was obtained the largest amount of dye retained will be used for all subsequent determinations.</i> j.The pH=2 and pH=11 can not be obtained with dilute solutions !! Enter the exact concentration of the HCl and NaOH used solutions . k. Pg. 3, in equation (2): is an extra bracket l.Pg.4, before chapter 3: must introduce a new subchapter = 2.5 about the used methodology and device for obtain the spectra.	
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	9. Results and discussion a. Pg.4 and pg. 5: To better highlight the changes that occur suggest you trace the spectra on a single figure, superimposed. b. Pg.4, line 116: "CH" before "unloaded" and " loaded CH with MB" instead of "MB loaded CH" c. Pg.4, line 117: "from" instead "on" before "the CH surface" d. Pg. 5, line 137: "of the solution" before pH e. Pg.5, line 138: is about "the pH variation" instead of "variation in MB pH". f.Pg.5, lines 138-139: without "The results shows that". Start with "The adsorption of MB" g. Pg.5, lines 144-pg. 6, line 153: It was indicated a references for (pHPZC) calculation, so it is not necessary to present entire method of his determination. Is sufficient the final value. h. Pg. 6, fig 2: differences are not significant after 6 value !!!! It should be borne in mind that at pH values above 10 dye molecule can suffer a number of changes (ex. can occur the molecules dimerization) i.Pg. 6, line 171: "grow more slowly" instead of "became reduced"	
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	j. Pg. 6, lines 174-175: Comparison with <i>Aspergillus fumigatus</i> is not suitable !!!! CH is a solid material based on chitin, <i>Aspergillus</i> is a microorganism ! Browse in the literature the data about similar low cost adsorbent (there are sufficient) k. Pg. 7, line 182: without “ percentage MB..... biosorbent used” l. Pg.7, line 184: “This behavior” instead of “ Increase in the adsorbent mass” m. Pg.7, line 185 : without “in” before “the adsorbent surface” n. Pg.7, line 188: It is not represented in the Figure 4 the variation of the amount of dye retained by the adsorbent mass. Is needed to introduce a secondary vertical axis to represent the variation of g (mg / g) depending on the adsorbent mass. o. Pg. 8, fig. 4: Missing unit of measure for “sorbent mass” from horizontal axe. p. Pg. 8, line 195: I suggest: <i>From Figure 5 it is observed that the amount of dye retained increases with increasing its initial concentration.</i> q. Pg.8, lines 196-198: Next the phrase can be eliminated: “It can be.... 298 to 308 K”	
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	r. Pg.8, lines 198-200: Sincerely I don't understand the message of this phrase: "The maximum adsorption.....Figure 4" s. Pg.8, lines 201: What do you mean???? Temperature influences the internal pore of adsorbent particle ??? t. Pg. 8, lines 202-205: Next the phrase unnecessarily loaded text : "It can be.....318K" u. Pg.9, fig. 5: missing units of measure for the axes parameters. v. Pg.9, line 214: "chose" instead of "employed" w. Pg.9, line 215: why 2 temperature and not 3 ? From Figure 5 is observed that was work at three temperatures. And then, for evaluated the thermodynamic parameters there also referred to 3 temperature! x. Pg.9, line 223: "The Freundlich...." must start as new paragraph y. Pg.9, line 229: "The isotherm parameters...." must start as new paragraph z. Pg.10, Table 1- calculate and insert data to third temperature, because the value corresponding to KL then used to thermodynamic study ! aa.Pg. 10, eq (5) has a typing mistake? ??	
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	$[\log(q_0 - q_t) = \log q_0 - k_f \cdot t]$ bb. Pg. 10, line 242: what metal is it?? cc. Pg.11, lines 262-263: This is not the purpose of the thermodynamic analysis! But rather to determine the thermal effect of the process and assess its spontaneity. Please revised this affirmation ! dd. Pg.11, line 266: C_{Ae} is a concentration !!!!! ee. Pg. 11, eq (8) has a typing mistake ? ?? ff.Pg.11, line 267: "The value of..." must start as new paragraph gg. Pg.11, Table 3: Column of "R" is completely more! 10. Conclusion a. Pg. 12, line 286: "Adsorptive removal" is an unfortunate expression!! Must be found an expression compatible with a scientific paper! b. Pg.12, line 286: did not work with "synthetic wastewater" !!! Only laboratory solutions !!! c. Pg. 12, line 289: without "perfectly" and "rate" after "pseudo-second-order" d. The conclusions must refer to the adsorption process used to remove dye from aqueous medium; i.e. operational parameters which influence the process, the thermic effect and spontaneity and rate limited step of	
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	the process. In conclusion: I considered necessary that authors review their entire manuscript.	
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments		