



SDI Review Form 1.6

Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	Ms_BJAST_24940
Title of the Manuscript:	Microstructure and In Vitro Bioactivity of Metal Substituted Hydroxyapatite
Type of the Article	Original Research Article

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.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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



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)
Compulsory REVISION comments	The document needs significant revision in terms of its language level. Only a few examples are listed below. Line 38 – what is AH?; line 42 – remove respectively as it is used improperly; line 43 - replace that with the; line 53 – replace HA with HAp; line 55 – add of between addition and some; line 60 – replaced integrates with integrated and replace hydroxyapatite with HAp; line 62 – add a comma before and after i.e.; revise the sentences in lines 66 – 68 – it does not make sense. Section 2.1 – How were the Mn and Fe modified HAp samples prepared? The lack of a section describing how the products discussed in the manuscript have been synthesized and purified is a serious flaw. The HAp synthesis paragraph is replete with grammar mistakes and poor sentence construction. How much Fe and Mn are present in the doped HAp? What levels of incorporation is needed to have useful products? Line 111 – how was the pH raised from 9 to 10-11 and maintained at that level? Line 127 – what is an evocable? Section 3 – The authors need to discuss the significance of the DSC results or remove it from the figure.	Dear Reviewer:- Thank you very much for the reports concerned the manuscript entitled "Microstructure and In Vitro Bioactivity of Metal Substituted Hydroxyapatite " In this regard, I inform you that the paper has been revised and amended according to the lines suggested by you. The comments are helpful and add to the content of the manuscript. The manuscript modifications were done by yellow highlight throughout the manuscript. Thanks again for the helpful comments Line 38 – what is AH? ****Corrected to Hap line 42 – remove respectively as it is used improperly *****Removed line 43 - replace that with the****Replaced line 53 – replace HA with Hap****Replaced line 55 – add of between addition and some*****Added line 60 – replaced integrates with integrated and replace hydroxyapatite with HAp****Replaced line 62 – add a comma before and after i.e. *****Added revise the sentences in lines 66 – 68 – it does not make sense. *****Revised Section 2.1- These equations are used For example: <u>Sample $(Ca_{9.2}Fe_{0.8}(PO_4)_{4.6}(OH)_2$</u>



SDI Review Form 1.6

	Line 163 – replace ammonium with ammonia. Line 167 - Where does the nitrate come from in pure HAp? If it is a residue of the synthesis, then the purification procedure for preparing HAp is not complete. Neither ref 30 nor 31 discuss nitrate decomposition, which only adds to the confusion about what the authors are reporting. There are plenty of papers that discuss the TGA behaviour of HAp and the authors are requested to reference them to explain their observations. Line 169 – replace deuce with be deduced. Where are sections 3.1 and 3.2? FTIR Analysis – All the FTIR spectra need to be replotted to clearly show continuous lines. Again, the authors refer to the presence of nitrates, which other published papers on HAp do not contain in them. Moreover, the peaks for nitrates are not visible in the figure because of the discontinuity in the lines. Line 240 – provide a reference to support your claim. What are the relative sizes of the ions – Ca+2, Fe+3 and Mn+2,+3? Figures 4.1 and 4.2 – replace atoms with ions. The legend a – e is missing in both figures. Fig. 6 – the structure of Ca iron phosphate is incorrect. The figure does not contain the legend a – e. Line 316 – Delete analysis.	$46 \text{ Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O} + 4 \text{ FeCl}_3 \cdot 6\text{H}_2\text{O} + 30 (\text{NH}_4)_2\text{HPO}_4 + 44 \text{ NH}_4\text{OH} \downarrow$ $5 \text{ Ca}_{9.2}\text{Fe}_{0.8}(\text{PO}_4)_6(\text{OH})_2 + 12 \text{ NH}_4\text{Cl} + 92 \text{ NH}_4\text{NO}_3 + \text{H}_2\text{O}$ <u>Sample (Ca_{9.2}Mn_{0.8}(PO₄)₆(OH)₂)</u> $46 \text{ Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O} + 4 \text{ MnCl}_2 \cdot 4\text{H}_2\text{O} + 30 (\text{NH}_4)_2\text{HPO}_4 + 40 \text{ NH}_4\text{OH} \downarrow$ $5 \text{ Ca}_{9.2}\text{Mn}_{0.8}(\text{PO}_4)_6(\text{OH})_2 + 8 \text{ NH}_4\text{Cl} + 92 \text{ NH}_4\text{NO}_3 + \text{H}_2\text{O}$ Fe and Mn ions are incorporated according to the structure presented in table 1 with Ca+metal/P molar ratio 1.67. Line 111*****NH4OH is used to neutralize all protons present into the reaction thus to obtain the optimum condition for precipitation. Line 127*****replaced by sample cell. Section 3 Our aim to use to use TGA/DSC is to remark the conversion temperature of amorphous HAp to crystalline one. Line 163*****Replaced Line167*****Purification is obtained by continuous stirring about 1 hr at temperature 80 °C. Line 169*****corrected FTIR spectra were replotted clearly. Peaks for nitrates are now visible. Line 240*****A reference is added. Figure 4.1 and 4.2*****Replaced Fig. 6 *****corrected Line 316*****deleted References : All the authors who contributed to each publication are listed.
--	--	---



SDI Review Form 1.6

	In the references, please list all the authors who contributed to each publication. The use of <i>et al.</i> is inconsiderate to the other authors.	
<u>Minor</u> REVISION comments	None	
<u>Optional/General</u> comments	None	