



SDI Review Form 1.6

Journal Name:	<u>British Journal of Applied Science & Technology</u>
Manuscript Number:	Ms_BJAST_31635
Title of the Manuscript:	Recent advances on mercury speciation in aquatic ecosystems, health effects and analytical techniques
Type of the Article	Review 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.

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>)



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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)
<u>Compulsory</u> REVISION comments	There should be a strong recommendation, that the areas that have not been explored in this research area should be given more attention by research as to cover up the gap, especially "the role of methylated tin compounds and humic substances in methylation of mercury", field experiments to demonstrate the action of bacteria in the demethylation of organic mercury compounds. From lines 289 to 309, you did not discuss the possible sources of EtHg and the biogeochemical reactions that can lead to the formation of EtHg in the ecosystem from ethyl mercurichthiosalicylate.	Thank you so much for these observations and comment. Necessary changes have been done in the revised manuscript.
<u>Minor</u> REVISION comments	Line 25, ^{200}Hg, should be ^{201}Hg, ^{196}Hg should be cancelled, because it is appearing twice. ^{194}Hg was not mentioned as one of the naturally occurring isotopes of mercury. Could it be a synthetic isotope? Line 35, what are the chemical formulae of cordierite (cordierite) and livingstonite. Please check, they may not be ores of mercury. Line 71, do you mean nitriles with the cyano (CN) group or nitrites with the NO_2 group. Line 96, "in humans", instead of "like humans" Lines 108, 112, "cobalamin" instead of "cobalamine" Line 135, how high can this pH be, may be you provide some specific figures to serve as a reference. Line 140, the "natural" could be better as "undisturbed" or "unpolluted" environment. Lines 145, 153, 155, "cobalamin" instead of "cobalamine".	Once again, I am so grateful for this reviewer for taking his/her time to go through this long manuscript in detail. I have addressed almost all the concerns raised in the revised manuscript, see the highlighted areas. Thanks.



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	Lines 159 – 167, if CH_3I has been demonstrated to be involved in direct methylation of mercury at high concentration, you should be specific and do not generalized them as all methyl halides. Line 246, “0.3mgkg^{-1}” instead of “0.3mgkg^{-1}”. Line 318, remove “like”. Lines 398 - 407, how can temperature, speed of water be kept constant, since no human is in control of these natural forces to avoid their nuisance. Line 425, can HNO_3 or H_2SO_4 be use in the absence of HCl. Line 428, how about using KOH in place of NaOH. Line 485, the source of your Fig. 4 was not stated and $\text{*R} = \text{C}_2\text{H}_4$, C_2H_4 is not an alkyl group. Lines 516 – 570, you did not say whether it will be possible to do speciation studies of Hg compounds without derivatization. Lines 611 – 614, you did not suggest alternative ways of carrying out this extraction, if SFE are not found in analytical laboratories and if found very expensive. Line 783, “addition” instead of “additional”. Line 815, “topped up to mark with what? Water or which solvent. Line 818, loosely capped, why? Will oxidation not affect the process? Line 829 – 831, Fig. 5, the carrier used is argon, can other gases be used? E.g H_2 or N_2. Line 869, “accurate” instead of “accuracy”. Lines 963 – 966, the way you exchange CH_3Hg and CH_3Hg^+, are they the same? Line 995, how can one obtain ultra pure distilled water? Line 1034 – 1035, if extract can stay for 14 days at 23°C, you did not say how long frozen extract at 4°C can stay before analysis. Line 1073, you did not say what solvent can be use to clean the electrode before reuse.	
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	Line 1081, Fig. 9 has no reference. Line 1088, “quantification” instead of “quantitation” Line 1091, how is this chemical processing done. Line 1100, insert “it” between mercury and has. Line 1103, insert “it” between condensates and is. Line 1115 - 1116, GC – ICP – MS will determine which isotope of Hg. Line 1120, is this not a cleaning process. Line 1194, insert “of” between limit and 0.1mgm^{-3} Line 1202, I am of the view that one of the big challenge to this lack of data is due to lack of instruments in research institutions and their high cost, could there be some simpler equipments that can substitute this sophisticated ones to improve the quality of research in these area of environmental study especially for researchers in African countries.	
<u>Optional/General</u> comments		