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Drinking Water Engineering and Science Discussions



# *Interactive comment on* "Solar Distillation of Impure Water from Four Different Water Sources under South-Western Nigeria Climate" *by* Saheed A. Adio et al.

**Saheed A. Adio et al.**

muriadam@gmail.com

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General comment The reviewer is so emphatical about we remove report on TDS and EC measurement. He stated this since we did not check the microbial level or activities. Many papers discuss TDS and EC so I guess we can leave it as it is. 1. Question EC and TDS are not sufficient to judge the treatment performance since these are not indicators for microbial contamination e.g. - Comparing EC and TDS to WHO guidelines is not sufficient to judge performance. Observation The scope of the study does not consider the level of microbial contamination in the water sample before and after the desalination. TDS and EC tested before and after desalination are just in addition



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to the effect of solar insolation and temperature variations on the yield of the distillate from the constructed solar still. These were carried out to judge the performance of the constructed solar still. Other yardstick/parameter exist but not within the scope of this study. The main objective is to evaluate the performance of the Solar still based on the obtained yield, WHO standard on the TDS and EC of the output, Cost reduction (based on the locally sourced materials used in construction), etc. TDS and EC measurement are one of the ways by which Solar still performance is checked in the literature. Future work may include checking the level of microbial contamination before and after desalination. 2. Comment - Line 21-26: see comment above Correction Authors made the correction based on reviewer's comment 3. Comment - Line 28-38: see general comment above and delete. Correction Authors remove "microbiologically" in line 36. Other statements in line 28 – 38 expresses the view of the authors. 4. Comment - Line 48-51: see general comment above and delete Correction Authors assumes this as part of background information to support the study. 5. Comment - Line 54-57: see general comment above and delete Correction Amendment has been made. 6. Comment - Line 58: bold statement Correction Amended with reference 7. Comment - Line 60-62: see general comment above and delete -Line 81, 84 & 89: word replacement and explanation on how this work solve the water purification problem Correction Modified to reflect author's opinion 8. Comment – Line 95-96: bold statement and should be rephrased. "this is with a view" Correction Amended. New statement is not too bold or too assertive 9. Comment – Line 138 -145: Should be rephrased based on general comment. Correction Amended as suggested by the reviewer, relevant references are included 10. Comment – Line 162&167: bold statement and should be rephrased. "this is with a view" Correction Amended with new statement not too bold or too assertive 11. Comment – Line 174: give overview of all the experimental settings Observation Figures 1 and 2 have shown the experimental set up, the detail overview is not considered necessary in the author's opinion. Other issues raised regarding duplicates in experiments and water sampling have been captured under experimental design. 12. Comment – Line 175: Performance evaluation should be under material and methods

Correction Amended as suggested by the reviewer

13. Comment - Line 183-186: explain what design variables were varied and evaluated for optimized performance

Reply In this research, none of the properties mentioned in the session were varied or evaluated for optimization. All will do was that we compared the performance of passive flat plate collector against the active type. 14. Comment - Line 196-209: should be rephrased (or deleted) based on the general comments above Reply I have checked this; I see no reason to rephrase or delete. It is important to the article in my own opinion. 15. Comment - Line 222-226: should be more extensive and part of Materials and Methods section Reply This has been elaborated in the material and method section according to comment line 174. The one here is just a preamble (just a paraphrase) to the new section. 16. Comment Line 228-230: consider deleting Reply I see no reason to delete this 17. Comment - Line 232: why randomly selected days? Is there another way to present all days? Reply Experiments were carried out on several days. But we can present all the results because of space. And the results equally behave the same in as much as the solar radiation for the days under consideration look similar and it is the same experimental condition and water sample. In some case some experiments were even repeated. So, the 9 days selected are 4 days for active solar still and 5 days for the passive type. 18. Comment -Line 236-237: is this relationship known from literature, then discuss this with literature -Line 238-240: rephrase or delete Reply Deleted; not necessarily 19. Comment - Line 243 and onwards: how does it compare with other studies? - Line 256 and onwards: how does it compare with other studies? Reply Reference given 20. Comment - Line 294-307: can be deleted, because the graphs represent the same data of previous Reply Authors feel we can retain this

Please also note the supplement to this comment:
https://dwes.copernicus.org/preprints/dwes-2020-5/dwes-2020-5-AC2-supplement.pdf

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