

Interactive comment on “Effect of water depth, Inlet water temperature, and fins on the productivity of a pyramid solar still – An experimental study” by Malik Yousef Al-Abed Allah and Mohammad Omar Abu Abbas

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Received and published: 13 December 2020

Dear Editor and Reviewer, The authors will like to appreciate the reviewers for taking the time to constructively critique the manuscript in order to enhance its quality suitable for the research community.

Comment 1: In the Abstract, the last sentence Line 42: one value of the productivity is missed as there are three temperature values. Action: It has been reviewed and modified, (the increases percentage increases of productivity of still was 15.3% when inlet

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temperature boosting from 30 Co to 40 Co, and the increases percentage increases of productivity of still was 21.2% when inlet temperature boosting from 30 Co to 50 Co

Comment 2: In the introduction: # Line 84, the word unsalted water is not correct. Action: It has been reviewed and modified

Lines 126 and 128, what is meant by PCMs and A48, authors must clear these abbreviations. Action: It has been reviewed and modified

Line 152, Agrawal et al (2017) found that the efficiency of the solar still decreased by decreasing the water depth. This is reverse to what is found by other referred articles in the Introduction part and even to what is found by authors in this paper. The authors should explain that. Action: It has been reviewed and modified # Authors did not refer to Arunkumar et al. (2012), while they have concluded that the productivity of solar still solely depends on climatic parameters and water temperature. An increase in water temperature results in an increase in evaporative and convective heat transfer coefficient in solar still. Also, the authors did not refer to Nayi and Modi (2018). They concluded the same effect of inlet water temperature in a comprehensive review on pyramid solar still. Arunkumar T, Vinothkumar Amimul Ahsan, Jayaprakash R, Kumar Sanjay. Experimental study on various solar still designs. ISRN Renew Energy 2012. (Kuldeep H. Nayiâ ĚZAO, Kalpesh V. Modi. Pyramid ĚĪ solar still: A comprehensive review. Renewable and Sustainable Energy Reviews 81 (2018) 136–148. Action: It has been reviewed and added

Comment 3: In the Experimental setup and procedure: # Line 192, what is PSS?, the Figure number is missed. Action: It has been reviewed and modified # Authors did not declare the inlet of water and the water collection from the system in Figs 1 & 2. Action: It has been reviewed and modified # Authors did not describe the way for controlling the water depth in the system and how they measure it. Action: It has been reviewed and modified (In this experimental study the depth of water has been fixed through days of the experiment) Also, the way for raising the temperature of inlet water is not

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described. Action: It has been reviewed and modified (The inlet water has been heated by an external source before starting the experiment)

Authors did not mention on what bases they select the range of water depth (1–5 cm) and the range of inlet water temperature (30–50°C). Response: all values in the manuscript have been selected according to the literature

Comment 4: In Results and discussion: # Line 210, the title is Results and discussion, 's' is missed. Action: It has been reviewed and modified

Line 224, the word "temperature" is missed. Action: It has been reviewed and modified # Figure 5 caption, it is not during experimental days, it is with different water depth during experimental hours. Action: It has been reviewed and modified # Discussion for why the productivity increases by decreasing the water depth are missed and there is no comparison with what was found in the literature for this effect. Response: The reason behind could be explained in term of the high thermal inertia of higher depth of basin water mass (It has been reviewed and modified). # Fig. 6 caption, it is not during experimental days, it is during experimental hours (X-axis is in hours). This is a common error in the text also. Action: It has been reviewed and modified

Line 243, the last sentence must be rephrased. It is not clear. Action: It has been reviewed and modified # Line 252, it is not clear what is meant by a 1 cm step? Response: all values in the manuscript have been selected according to the literature # Fig. 8 caption, depth is plural. Action: It has been reviewed and modified

Discussion of why freshwater production increases by decreasing the water depth are also missed. Response: The reason behind could be explained in term of the high thermal inertia of higher depth of basin water mass (It has been reviewed and modified). # Authors must revise the English of the manuscript. There are many errors in typos and grammar. Action: It has been reviewed and modified

Please also note the supplement to this comment:

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<https://dwes.copernicus.org/preprints/dwes-2020-27/dwes-2020-27-AC1-supplement.pdf>

Interactive comment on Drink. Water Eng. Sci. Discuss., <https://doi.org/10.5194/dwes-2020-27, 2020>.

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