Optimization analysis of active solar still using design of experiment method

This paper deals with solar still system. The authors used design of experiment (DOE) method to study the effect of many parameters on the performance of active solar still system. Also, to show which parameters have the most significant effect and which of them dose not has any significance. This paper could publish in Drink. Water Eng. Sci. journal, however the following comments must be covered:

(1) In the Abstract, the last sentence Line 40 is not clear which parameter is the most influences for the saline water temperature and the condenser cover temperature. This sentence should be rephrased.

(2) In the Nomenclatures:

Linees 57 and 58, the symbol (Q_{cb-w}) is repeated two times.

Line 59, to is missed.

Line 62, Ski is English mistake.

(3) In the introduction:

Line 79, to is missed in varies from person to another.

Line 96 and 101, The two references Bataineh and Abu Abbas (2020) should be distinguished by a and b.

Line 105 the dot after Manokar et al (2020) should be removed. The same in case of Khalifa et al (2009) in Line 110.

Line 117, authors did not mentioned anything about the location of the referred system.

Line 125, what is M.S.basin? M.S. should be identified.

Line 136, phase change material should be deleted as you identify PCM in the previous sentence.

The introduction did not cover the papers that deals with study many factors that affect solar still system. Authors should cover this, for instance Poblete et al evaluated the influence of several factors, such as the basin

heating, the material of the cover (glass or polycarbonate), the existence of a mirror, the activation of an air extractor, and the existence of a black painted floor in the solar still, in terms of their contribution to brine evaporation. The experiments were conducted with a factorial design approach.

"Poblete et al, Investigation of the factors influencing the efficiency of a solar still combined with a solar collector. Desalination and Water Treatment, 57 (2016) 29082–29091."

(4) In the Methodology:

The number of lines overlapped with the equations, which did not made these equations unreadable.

Many symbols in the equations did not identified such as Pt, Ab, Tb, mb, CPb, mw, CPw, Qcw-c1. What is the difference between Tb and Tc, and also mb and mw.

In Equation 4, the convection heat transfer from outer condenser cover to sky is written in Nomenclature as Qrc2-s and in Equation 4 as Qrc2-sk, please unify.

(5) In Results:

Line 317, Fig. 5, authors used different materials such as glass and steel what is the response in between these two factors represent? How you can consider the material as parameter with a definite value? The same for air blowing, what is the values in between without and with air blowing meant?

In Section 4.1, authors should give explanations for why this factor has the highest effect on the responses. This can be done by comparing with what is found in the literature and to give strong evidences to support their findings. The same is for Section 4.2. Generally, discussion is not sufficient in these two sections.

In Optimization Design Section (Line 384), authors mentioned the conditions in Table 2&3 to achieve the optimal value for the responses. These conditions did not confirmed by any experimental data. This is also

did not make any validation for all the results obtained by DOE method. I recommend to do an experiment with these optimal conditions to compare with the theoretical findings.

(6) In the References:

Agrawal et al (2017) is not present in the reference list, while it present in the Introduction section Line 144.

Some references are not given in full such as Manokar et al, the volume and issue no. are missed and Abu Abbas & Al-Abed Allah, the no. of pages is missed.

The reference of Al-harahsheh is repeated two times.

Some references are not given by DOI.