

General comments:

The paper title as it is not proper for research development in distillation industries. The impact and finding of such a title are very basic and known to all workers in this field; the title does not bring new things to distillation. The effect of changing the reflux ratio on number of stages or height of column is very common and fundamental results which require no new proofs! The theories of design presented at the beginning of the research paper are irrelevant since they are basic foundations of distillation and need not be reviewed.

However, looking at the contents of the paper guided me to suggest a proper title that shows an impact for publications that is "Development of a new simulation model for distillation design of bio-ethanol/water systems". The simulation model needs to be elaborated on, giving more detail on how the design equations are built and solved together with others for thermodynamic calculations, what equation of state is used or otherwise, algorithm for solution, input and output parameters, etc. A comparison of the results of the case study against existing rigorous or shortcut models need to be accounted for to show the reliability of the simulation model. The new paper structure will include the discussion of the process simulation model at the beginning, followed by theories and equations used in the simulation.

Other minor comments:

The paper is well-written in terms of English.

Figure 2: not clear!

In Figure 9, more points are needed to be compared with standard curve of reflux versus number of stages. For such curves, 2 main points are characteristic every distillation system, minimum reflux versus infinite number of states, minimum number of stages versus total reflux.

Equation 8: needs re-writing!

AUTHOR'S COMMENTS

The comments in your 2nd paragraph is well taken and accepted but I will like to let you know that another paper titled "development of a bioethanol plant distillation column:

process design software using McCabe-Thiele method” is under review for publication and this dealt with the aspect of “development of a new simulation model for distillation column design of a bioethanol /water systems”. So we have changed the title of this paper under your review to” A new simulation model for design of distillation column in a bio-ethanol/water system:Effect of reflux ratio.”

Other minor comments have also been effected. Figure 2, the unclear axes has been made bolder and readable.

Fig.9 now becomes fig.7 which is clearer and legible

Equation 8 has been re-written.

Note: Modification was done in this document ONLY to hide some comments, which are against the SDI peer review guidelines.