



SDI Review Form 1.6

PART 1:

Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	MS: 2012/BJAST/2280
Title of the Manuscript:	Fuzzy Sequential forward search for Oil Formation Volume Factor Predictive Tool Factor for Niger Delta Crude Oil.

General guideline for Peer Review process is available in this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)

- This form has total 9 parts. Kindly note that you should use all the parts of this review form.



SDI Review Form 1.6

PART 2: 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		
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments	This paper has focused on prediction of oil volume factor in the reservoir. This is a good job and really needed for petroleum industry. But there are some technical comments that answering to them can help us to know how this methods would be applicable and if this has an important contribution in petroleum engineering. First of all let me attract your attention to data availability. When you have a large collection of experimental data, it hopefully enables you to make a comprehensive predictive model for training and calibration purposes. BUT, Could you present this model as formula for all parts and formations of the reservoir? Could you assign this model to a reservoir simulator? In fact is it applicable to reservoir engineers?	The reservoir engineer will have to study the work and apply it. Fuzzy logic and ANN successfully has been applied in petroleum engineering but the setback is you have to understand the tool before you can apply it. It has a lot of command and your ability to play round it depends on your understanding. On overfitting SEQRSCH is used to screen the variables based on their effect on developed model. Fuzzy logic as a tool have to ability to accommodate imprecise data(Salam et al, Olatunji et al and any work that discuss fuzzy logic address it.



SDI Review Form 1.6

	If the authors check the validity of the reservoir fluid samples before modelling? What is the stopping criteria of ANFIS? How the authors have fixed the problems of over fitting and local Traps in ANFIS training process? RMSE is not suitable parameter for checking the validity of the final model, if the authors use the cross-validation sets that can improve the training process? (More info is available in Saemi, et al. "Design of neural networks using genetic algorithm for the permeability estimation of the reservoir") The parameters used to develop the model are related to the entire reservoir or you do it for every zone/segment/formation/part of the reservoir? The curve of epoch number shows that 100 epoch number is not enough for training process. Did you try more than this number?	Data The data collected are from reservoirs in fields across Niger delta. Crossplot Crossplot/ cross validation are now included in the work as 4.2. Epoch number Essence of epoch number is to see the trend of error generated. If the error generated is increasing, it becomes a problem and if it is decreasing your model is save. For the first 100 epoch number the error generated reduced, so there is no need to increase the epoch number further than 100, unless the error is increasing. If the error is increasing epoch number will give the result and the researcher will have to go back to the model and tune it again. Based on the output from the model 100 is a good number to monitor the trend of the model.
--	--	---