



SDI Review Form 1.6

Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	2014_BJAST_13696
Title of the Manuscript:	Efficient open isobaric expansion based thermal cycles at low temperatures
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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



SDI Review Form 1.6

PART 1: 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	(1) The impact of the isentropic efficiency of the expander on the system performance should be considered. Normally, piston expander suffers a low efficiency at high speed conditions. (2) At line 274 , how to calculate the specific work? (3) It is better to give the formula of Carnot Factor. (4) Could you give the reason for the correlation between Pr and η?	1). Your observation is correct. Normally, piston expander suffers a low efficiency at high speed conditions. Mainly when operating undergoing adiabatic expansion processes However, (a) The expansion-contraction process in the proposed thermal cycle is an isobaric (not adiabatic) transformation along the full stroke of the piston-cylinder, so that it is a quasi-isentropic transformation. The isentropic efficiency can be neglected. (b) The speed of the piston is very low with large cylinder volumes and very low pressure differences between both sides of the cylinder as you can see on the tables of the appendix A 2). The specific work is extracted directly from the tables of appendix A by calculating the difference $(q_i - q_o) = W_n$. See for instance: " Michael J. Moran and Howard N. Shapiro, Fundamentals of engineering thermodynamics, 4th ed. 1999, John Wiley & Sons, USA" 3) Formulas of Carnot factor have been added. 4). One of the objectives is to achieve large thermal efficiencies. Consequently, since the thermal efficiency depends on the pressure ratio, it is relevant to know the range of pressure ratios for which the efficiency is acceptable and in any case the optimum pressure ration with respect to the thermal efficiency.



SDI Review Form 1.6

<u>Minor</u> REVISION comments	At line 175, Figs. 5 should be revised as Fig. 5. At line 287, [31] should be revised as [4]. TTC and RTTC should be added to Acronyms.	Corrected as suggested Corrected as suggested TTC and RTTC have been cancelled because they are OPTC and ROPTC respectively. Thank you for your effort in trying to improve the paper
<u>Optional/General</u> comments		