



SDI Review Form 1.6

Journal Name:	Physical Science International Journal
Manuscript Number:	Ms_PSIJ_32822
Title of the Manuscript:	Exact Calculation of the Internal Energy of the Ideal Gas in Statistical Mechanics
Type of the Article	Short Communication

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>)



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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)
Compulsory REVISION comments	<p>This manuscript is not suitable for publication. It is based on errors and misunderstandings on how to bridge between statistical mechanics and thermodynamics.</p> <p>The author starts with the canonical partition function for non-interacting particles and observes that the partition function depends on volume. This is true, but this is the volume identified from the dimensions of the individual "box lengths" and this does not depend on temperature. Thus, the derivative in Eq. (9) is zero and Eq. (3), which is correct, is recovered.</p> <p>A calculation of U from $\sum U_i \exp(-U_i/kT)/Z$ by direct integration readily gives $3kT/2$ (per particle), or $3NkT/2$ for N particles.</p> <p>In conclusion, the arguments in this manuscript are flawed and it cannot be published.</p>	<p>The volume is identified from the dimensions of the box but the dimensions can be arbitrary.</p>
Minor REVISION comments		
Optional/General comments		