



SDI Review Form 1.6

Journal Name:	Physical Science International Journal
Manuscript Number:	Ms_PSIJ_33660
Title of the Manuscript:	Maxwell Relations for Substances with Negative Thermal Expansion and Negative Compressibility
Type of the Article	Short 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>)



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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>The manuscript considered negative thermal expansion of substances and the changes of Maxwell relations and Universal Maxwell relations have been derived. According to the abstract The results obtained have been confirmed experimentally by a number of authors.</p> <p>Comments:</p> <ol style="list-style-type: none"> The phenomenon is not new, it is known for two decades at least. The observation of change in Maxwell relations was considered by Kal Renganathan Sharma, "On Thermodynamic Analysis of Substances with Negative Coefficient of Thermal Expansion", Engineering, 2013, 5, 844-849 Published Online November 2013 (http://www.scirp.org/journal/eng) http://dx.doi.org/10.4236/eng.2013.511102 The abstract promised experimental verification, but in the text there were no detailed examples to demonstrate the usefulness of the derived equation. <p>The manuscript should be classified review rather than research.</p>	<p>Dear Referee, thank you for your comments. I introduced a new reference [19] into my paper.</p> <p>1) Your question is not quite clear to me. Do you mean, the phenomenon of negative compressibility? Yes, it is known for two decades at least, and I do not deny that. I cite papers of authors who studied this phenomenon. Nobody tried to derive the Maxwell relations for such substances.</p> <p>2) In that paper there is a misprint in Eq. 19: minus sign is omitted before the right-hand term. Its Eq. 23 is also wrong: find the derivative $(\partial H/\partial P)_T$ in a Table of thermodynamic derivatives (for example, ref. 17 of my paper), and Eq. 23 turns to $\alpha = \alpha$ (Sharma uses notation β instead of α). According to [17], $(\partial H/\partial P)_T = (1 - \alpha T)V$.</p> <p>3. The experimental confirmation of my results is in Appendix after References.</p> <p>4. This must be the decision of the Editors.</p>
Minor REVISION comments	<p>Equations (4) and (5) when compared to equation (3) one observes that the heat change is disappeared, why? Are these adiabatic processes?</p>	<p>These equations were written for zero heat losses, and yes, these are adiabatic processes. I have included an elaboration of that. In more details, one can read about that in [10, 11, 13, 19], as I cited in my paper.</p>
Optional/General comments		