



SDI Review Form 1.6

Journal Name:	Physical Science International Journal
Manuscript Number:	Ms_PSIJ_40223
Title of the Manuscript:	Phenomenology of the origin of isotope effect.
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>)



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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	I enjoyed reviewing this manuscript .However; it needs to be slightly revised before it can be considered for publication. The authors claimed the study of “ Phenomenology of the origin of isotope effect”.. As written, they did. I hope that these comments will help improve the manuscript. 1. The author repeated the following paragraph on page 3 (to be deleted): from :Our present knowledge of physical phenomena suggests that there four types of forces between physical bodies (see, e.g. [9, 12]) to Subatomic physics deals with all entities smaller than the atom. 2. The authors conclude that nuclear forces have a "saturation property". Is it possible to indicate an example from the literature confirming this state of saturation? (page 3) 3. The materials and methods part is missing. How did the author proceed to find the results??? what methods and what equipment 4. Results (page 4): Put the paragraph below in the materials and methods section. Below we will briefly describe the results of the optical spectroscopy of isotope – mixed solids. The apparatus used in our experiments has been described in several previous publications [9, 10, 11]. For clarity, we should mentioned here that immersion home – made helium cryostat and two identical double - prism monochromators were used. One monochromator was used for the excitation and the other, which was placed at right - angle to the first for analyzing the luminescence and scattering of light. In our experiments we investigated two kinds of crystals (LiH and LiD) which are differ by a term of one neutron.We should remind very briefly about the electronic excitations in solids. According to modern concept, the excitons can be considered [11] as the excited of the N – particles system: An electron from the valence band (see Fig. 1 in [11]) is excited into the conduction band. The attractive Coulomb potential between the missing electron in the valence band,which can be regarded as a positively charged hole, and the electron in the conduction band gives a hydrogen - like spectrum with an infinitive number of bound state and ionization continuum (Fig. 71 in [13]). 5. As the concentration of deuterium increases, the maximum of the long waves widens and moves towards shorter wavelengths. Explain this variation according to the concentration of deuterium?(page 4) 6. The virtual crystal approximation (VCA) method cannot describe the observed experimental results; this deviation from the linear limit is related to the isotope induced disorder in mixed crystals. What are the other factors of influence?(page 7) Plagiarism issue: 32% Plagiarism	
Minor REVISION comments	Correct table 1	
Optional/General comments	This paper is recommend for acceptance -This paper is a new and original contribution to the literature -the title of the paper reflect sufficiently and clearly the contents -the abstract contain a sufficient summary of the paper's contents to be useful and informative -the organization of the paper is satisfactory -the illustrations and tables all necessary and acceptable - The notation and nomenclature used are conform to standards acceptable in the area of	



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	physic -the length of the paper is appropriate for the content -the interpretations and conclusions sound are justifiable - the references are appropriate - the English is perfect in this paper	
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Reviewer Details:

Name:	LABIDI. Nouar Sofiane
Department, University & Country	Chemistry Departement, University Centre of Tamanrasset, Algeria