



SDI Review Form 1.6

Journal Name:	Physical Science International Journal
Manuscript Number:	2014_PSIJ_14438
Title of the Manuscript:	New metrology approach for single molecular device: probing of molecular energy gap by electrical and optical measurements
Type of the 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	Good contribution to prove theory with experimental work – good results. Good proof of methods to construct nanogate device. Good work for improved measurement of device response with only two instruments with good agreement. Reference match all work cited in paper	Thanks a lot!
Minor REVISION comments	Minor revision is highly needed. There are many typos and grammar mistakes which may affect the quality of this paper. These are a few examples but not only limited to the ones listed here. e.g., line 33, has potential to become line 36. This ~~is a~~ line 39. ~~Way~~ for the line 40. Mechanism line 42. Presumes → assumes line 44-47. (this seems very awkward in terms of sentence structures)	corrected corrected corrected corrected corrected This sentence was rewritten: "Tunneling through HOMO and LUMO molecular orbitals is determined by values of Φ_{BLUMO} and Φ_{BHOMO} barriers between these molecular orbitals and EF of electrodes. For device with Au and Al electrodes those barriers are designated as Φ_{BAu} and Φ_{BAl} correspondingly. Φ_{BAu} and Φ_{BAl} barriers can be derived from conductivity measurements by using Simmons model at low biases. Knowledge of Φ_{BAu} and Φ_{BAl} values and difference in work function, ΔWF, between Au and Al metal electrodes allows us to evaluate gap



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	line 52-53 (Needs to be modified at “in differ to...” very difficult to understand meaning line 59. Change “taken” to “obtained” line 66. Parameters <u>are</u> critical etc..	between HOMO and LUMO for single molecular junction by summation of Φ_{BAu} and Φ_{BAI} and ΔWF values. We designate the HOMO-LUMO gap that can be derived from electrical measurement as $\Phi_{B\Sigma}$. ” Corrected to “and” Corrected Corrected
<u>Optional/General</u> comments	Recommend for acceptance based on the good experimental work in the area of single layer molecular device (nanogate or nanodiode)	