



SDI Review Form 1.6

PART 1:

Journal Name:	Physical Review & Research International
Manuscript Number:	MS: 2012_PRR_I_2884
Title of the Manuscript:	Electronic structure with rovibrational and dipole moment calculations of the LaS molecule.

General guideline for Peer Review process is available in this link:

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

- This form has total 9 parts. Kindly note that you should use all the parts of this review form.



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PART 2: 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>(1) The beginning part of 2.2 (line 96-108) should be written in the Introduction.</p> <p>(2) At line 48-49, and also at line 108-109, "cancellation between hyperfine and rotation interval" are written. I myself understand the meaning (the transition freq. between two quasi-degenerated states are sensitive to the variation in fundamental constants). But it might not be understandable for people who are not familiar with Refs.[19]. I think a simple explanation should be given.</p> <p>(3) The title of 2.1 is "Ab initio calculation" and 2.2 is "The vibration-rotation calculation". I think also vib-rot. States calculation is ab-initio. It should be better to write 2.1 "Electronic state calculation".</p> <p>(4) In Eq. (3), a letter Φ is used, but it is cited as ϕ in the following. It should be unified.</p> <p>(5) In Figs.1-4, the units of interatomic distance and potential energy are not shown. Please show it.</p> <p>(6) In line 260, La atom is taken as origin. But the origin should be center of mass; so that the relative motion and center of mass motion should be devided. I know that the dipole</p>	<p>(1) From line 96-108 are moved to line 55-67</p> <p>(2) I added the sentence of the referee to the text and I added the sentence "The enhancement is result of cancellation between the hyperfine and rotational intervals" in the lines 50-53.</p> <p>(3) The title of 2.1 is changed.</p> <p>(4) ϕ is changed and unified.</p> <p>5) the units of interatomic distance and potential energy are added to the figures</p> <p>(6) I removed the sentence "By taking the La atom as an origin in our calculation " f rom line 195.</p>



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	moment has no dependence on the position of origin for neutral molecules. But it is significant problem for molecular ion.	
Minor REVISION comments	In Table 3, $B_v \times 10$ or $B_v \times 10^2$ are shown. I think it is better to show just B_v , as done in Table 2.	I removed the power 2 in $B_v \times 10^2$ in Table 3 and I corrected the last 5 values of B_v for the state $(2)^2\Sigma$ in Table 3
Optional/General comments		I deeply appreciate the valuable remarks and corrections of the referee.