



**SDI Review Form 1.6**

Journal Name:	<a href="#">Physical Science International Journal</a>
Manuscript Number:	2014_PSIJ_12576
Title of the Manuscript:	Electron energy levels for a finite elliptical quantum wire in a transverse magnetic field
Type of the Article	Research paper

**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.

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SDI Review Form 1.6

**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)
<b>Compulsory</b> REVISION comments	<p>To my opinion, in the present form the paper under review cannot be published for the following reasons:</p> <ol style="list-style-type: none"> <li>1. Some of the statements and claims of the Author/Authors are unclear or simply wrong. For instance, page 1, the lines 25-26 : "... due to lithographic processing, and in high density by the use of..." etc. It is absolutely unclear what does it mean: "... in high density.."</li> <li>2. Page 2, the lines 51-52; "...elliptical dimensions." What does it mean "elliptical dimensions"? Perhaps the Author/Authors would like to say "elliptical shape"?</li> <li>3. The Author/Authors claim(s) that operator <math>p_z</math> commutes with the Hamiltonian (2) of the paper, and it is correct, but later on he/they claim(s) that it means "the problem is still 2D" which is obviously wrong. Indeed, let us suppose that the sizes of the quantum wire (QW) cross-section is much grater than the Fermi's wave length of the electron, but the magnetic field is still present.</li> </ol>	<p>1.", and in high density" is deleted in lines 26-27.  2"elliptical dimensions" in lines 55-56 in changed to "the shape of ellipse".  <b>"3.two-dimensional (2D)" in line 66, "2D" in line 68 and "The total Hamiltonian ...The problem is still 2D" above Eq. 5 are deleted.</b></p>



SDI Review Form 1.6

	<p>Then we can neglect the space quantisation in <math>x</math>-<math>y</math> plane, however the Landau quantisation in <math>y</math>-<math>z</math> plane due to magnetic field would be present. In external magnetic field the particle motion "is not quantized" only along the field direction (in the geometry considered by the Author/Authors it is <math>x</math>-axis) but it is quantized in the plane perpendicular to it, that is, in <math>y</math>-<math>z</math> plane. Now let us diminish the QW cross section and make it comparable or less than Fermi's wave length of the electron. It is obvious that now we should take into account not only Landau quantization in <math>y</math>-<math>z</math> plane, but also the space quantization in <math>x</math>-<math>y</math> plane. So, the problem is 3D, but not 2D as the Author/Authors claim(s). The fact that <math>p_z</math> operator commutes with the Hamiltonian has nothing to do with it. Another strange statement is the choice of <math>p_z=0</math>. This choice is absolutely ungrounded and contradicts even the Author/Authors' own statement that the component of the wave function depending on <math>z</math>-coordinate is a plane wave.</p> <p>The paper is written in the slovenly manner, there are many misspellings (page 2, line 43 "magnetopoiaron"; it should be "magnetopolaron"). Line 47 in the same page: "Among the papers, electron energy spectrum..." <i>etc.</i> and these are only a handful of examples.</p> <p>The general comment is that the paper has to be</p>	<p>1."magnetopoiaron" in line 44 is changed to "magnetopolaron". 2."wire has" in line 52 is changed to "wires</p>
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	substantially revised, it needs not only cosmetic corrections but essential amendments related to the very concept of the paper, if the Author/Authors would like it to be published. The same is the quality of English is concerned, Author/Authors should consult it with the native-speaker of English or at least with somebody who is better command this language.	have”. 3.”ring has” in line 53 is changed to “rings have”. <b>”dimensions” in line 239 is changed to “size of the ellipse”.</b>
<b>Minor</b> REVISION comments		
<b>Optional/General</b> comments	I cannot recommend the paper to be published in its present form. It needs substantial revising and corrections.	