



**SDI Review Form 1.6**

Journal Name:	<a href="#">Physical Science International Journal</a>
Manuscript Number:	Ms_PSIJ_23419
Title of the Manuscript:	Application of Gamma-Ray Attenuation in Studying Soil Properties
Type of the Article	Original Research Articles

**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:

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**PART 1: Review Comments**

	<b>Reviewer's comment</b>	<b>Author's comment</b> <i>(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)</i>
<b>Compulsory</b> REVISION comments	<p>The manuscript "Application of Gamma-Ray Attenuation in Studying Soil Properties" presents the investigation of total and partial photon interactions with soil in the energy range of 1 keV–100 GeV and The total mass attenuation coefficients, effective atomic numbers and electron densities for some soil samples have been calculated by using WinXCOM program. The data reported for the purpose of comparing these soils in terms of radiation sensitivity and radiation detection.</p> <p>However, the work presented in the manuscript is not accepted for publication in its present form unless the authors are suitably addressing the comments included below.</p> <p><b>Abstract</b></p> <p>1. An Abstract summarizes the major aspects of a paper. It is usually one paragraph of 200-300 words, and should succinctly summarize the purpose of the paper, the methods used, the major results, and the author's interpretations and conclusions. However the current paragraph is ~ 117 words and the authors did not summarize how the research was conducted and what was their conclusion.</p> <p>Authors are recommended to improve the abstract based on the above instructions.</p> <p><b>Key words</b></p> <p>2. Should be 5 and above.</p> <p><b>Introduction</b></p> <p>3. Authors are advised to provide the reader with all the information needed to understand the rest of the paper, to</p>	



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	<p>summarize the problem to be addressed, give background on the subject, discuss previous research done on the topic, and explain exactly what this paper will address, why, and how. The authors are also required to clearly state their hypothesis, and summarize the methods used to investigate that hypothesis.</p> <p><b>Method of Computation and Theoretical Basis</b></p> <p>4. Authors are advised to identify all symbols in each equation.</p> <p>5. statement highlighted on line 60 &amp; 61 should be inserted below eq. (5).</p> <p><math>n_j</math> is the number of atoms of the constituent element, <math>\sum n_j = n</math> is the total number of atoms present in the molecular formula.</p> <p>6. Authors are to continue deriving the equation to find the expression of <math>Z_{\text{eff}}</math>.</p> <p>7. on the lines 56, 58, 63, and 66, the equations sequence is to be corrected</p> <p><b>Methodology</b></p> <p>8. This section does not appear in the manuscript. I recommend authors to add this section provided that it should contain no results, conclusions, or interpretations. In this section, several key points need to be addressed. Authors should thoroughly describe the methods they used to prepare the samples and the experimental steps taken in carrying out this study to investigate the problem, and should briefly describe why these methods were used. Adding diagrams probably help better understanding of the problem.</p> <p><b>Results and Discussion</b></p> <p>In this section, the authors should thoroughly detail the experimental results. However their results are supplemented by figures and tables, yet I recommend the authors to address the following issues:</p> <p>9. What are the soil samples? Specify.</p> <p>10. On line 75, 76, 77, 78, 79, and 80, specify the range of each</p>	
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	<p>energy region.</p> <p>11. Define Z on line 89.</p> <p>12. In all figures energy is measured by (keV). However on line 91 the unit is (MeV). Therefore consistency is required.</p> <p>13. The overall discussion is poor and lack of explanation and justification.</p> <p><b>Conclusion</b></p> <p>In this section, authors should thoroughly detail their results in numerical values. However none are shown by the authors!!</p> <p>14. 114 &amp; 115; The electron density and effective atomic number are closely related and they are qualitative energy dependence. Can't understand the highlighted text. It is incomprehensible. Therefore, authors are required to explain more.</p> <p><b>References</b></p> <p>15. There are 16 references altogether on page 6-8. Obviously authors have cited only reference 5 resulted in loose, incoherent, incomprehensible and insufficient introduction and discussions. Accordingly the manuscript should be restructured; rewritten and references should be referred to and properly cited.</p> <p><b>Tables &amp; Figures</b></p> <p>16. On table 1, 2<sup>nd</sup> column is the value 11.20 or 11.40?</p> <p>17. In figure 1, 4, and 5; plot of 3 samples out of 5 are shown. Authors are to add/show all plots of 5 samples.</p> <p>18. On Fig. 3 caption; Variation of <math>N_e</math> with photon energy of the soil sample.....however on the y-axis of fig. 3 authors used <math>N_e</math>. consistency is always required overall the manuscript.</p>	
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<b><u>Minor</u></b> REVISION comments	<p>19. Authors are recommended to improve on English language and to observe typo-error and grammar mistakes such as;</p> <p>20. On 101 <math>N_{el}</math> <b>is were</b> found to lie within range of.....</p> <p>21. On 116 that soil having high <math>Z_{eff}</math> absorbs <b>efficiently</b> incoming photons.</p> <p>22. On 121-143, space back once. <b>(1. Antoniassi)</b></p> <p>23. On 154, 156, and 158, <b>(2012b)</b>??.....</p>	
<b><u>Optional/General</u></b> comments	24. Add abbreviation table.	

**Reviewer Details:**

Name:	<b>Anonymous</b>
Department, University & Country	<b>International Islamic University Malaysia (IIUM), Malaysia</b>