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| Book Name: | **Plasmas Afterglows with N2 for Surface Treatments synthesis 2024** |
| Manuscript Number: | **Ms\_BPR\_ 3686.8** |
| Title of the Manuscript: | **Electron and Vibrational Distributions in N2 Flowing Discharges and Postdischarges at Reduced Gas Pressure** |
| Type of the Article | **Book chapter** |

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| **PART 1: Review Comments** | | |
| **Compulsory** REVISION comments | **Reviewer’s comment** | **Author’s Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback*  *here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.** | **The manuscript is important to the scientific community in that it explains the concept of quantum mechanics, molecular spectroscopy and statistical mechanics.**  **I like the manuscript because it compares the theoretical and experimental parameters.**  **It describes the distinction between the flowing discharges and post-discharges in N2 molecules.** |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | **Yes, the title of the article is suitable enough.** |  |
| **Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.** | **The abstract of the article is comprehensive enough.**  **However, the abstract should be in a single paragraph and not in a multiple paragraphs.** |  |
| **Are subsections and structure of the manuscript appropriate?** | **Yes, the subsections and structure of the manuscript are appropriate.** |  |

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| **Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required**  **for this part.** | **The description of the experimental set-up of the discharge tube shows the scientific relevance of the manuscript. The electric field in the discharge column which was determined from the floating potential, the electron density measured by the electron cavity, gas temperature and the coupling of electron and vibrational temperatures in post-discharge further proved the scientific robustness of the article.**  **The use of equations for the explanation of the concept make the article technically sound.** |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.**  **-** | **The references are sufficient but are not recent.** |  |
| Minor REVISION comments  **Is the language/English quality of the article suitable for scholarly communications?** | Yes, the English quality of the article is suitable for scholarly communications. |  |
| **Optional/General** comments | **Abstract:**   1. Under Abstract, 2nd paragraph, put a “comma” after “in the discharge” and after the post-discharge. 2. Put a full stop at the end of the last sentence.   **Figures:**   * 1. Most of your Figures did not have axis-labels.   2. Try and type the axis-labels rather than copy and paste.   3. Some scales in your plot are not good enough.   In a sentence after Fig. 8.2, re-write it as “the maximum value of ne was found at p……. In Fig. 8.1, in the title Figure, re-write ne as ne =1010 cm-3 .  In the 1st paragraph after Fig. 8.6, Write it as “it can be populated as an over-population… which is more  sensitive at time (do you mean to write 6 x10-3 s?).  Do not put a full stop at the end of the “…V-V pumping up effect as given by the relation”.  **Section 8.4:**  Paragraph 2, Line 4, Write it as “deduced that” instead of “deduced than”. In the paragraph after Fig. 8.10, In Line 2, change “eedf” to “EEDF”.  **Conclusion:**  Paragraph 2, [1] should be in the same line with afterglow. Paragraph 3, in Line 1, remove “was”.  Paragraph 4, in Line 1, put a comma after post-discharge. |  |

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| **PART 2:** | | |
|  | **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)* |
| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in details)* |  |

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| **Reviewer Details:** | |
| Name: | **Kehinde Marvellous Ajekiigbe** |
| Department, University & Country | **Federal University Oye-Ekiti, Nigeria** |