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| Book Name: | **Plasmas Afterglows with N2 for Surface Treatments synthesis 2024** |
| Manuscript Number: | **Ms\_BPR\_** **3686.2** |
| Title of the Manuscript: | **Active Species in R (He,Ne,Ar)-Molecular Gas Plasmas** |
| 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 write up has expand the knowledge of cold plasma reactive species produced from inert gases. This is important and will help in understanding the reactive species spectra diagnostics during plasma generation. The chapter has highlighted the interaction of the chemical species with He, Ne, and Ar at gas interphase which crucial in plasma generation. The contribution is scientifically robust.** |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | I suggest the following title: **Interaction of Active Species in R (He, Ne, Ar) Gas Plasmas** |  |
| 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 is ok. However, I suggest that all units in the manuscript should converted to S.I. units for consistency. For instant in the Abstract 5 torr should converted to S.I. unit of pressure.** |  |
| **Are subsections and structure of the manuscript appropriate?** | **Yes, but the introduction has not adequately introduce the background of the chapter. For example; See Page 46: In the overall Introduction on this page, there are many disjoints statements, inferences to other subsection and chapters which would be very difficult for the targets audience to comprehend. I suggest all these paragraphs on page 46 should be revised and each paragraph should systematically explain the important message the paragraph is trying to portray.** |  |
| **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 reaction chemistry is adequate. The presentation of all the equations are commendable. The depth of authors’ understaning of the topical issue is excellent. However, for sake of potential readers, I suggest that** **Equations 11, 12 and others: Authors should use Microsoft Word equation editor to write these equations properly.** |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.**  **-** | **No. All the references listed are obsolete, with latest one being 2001. I suggest authors should improve on this and cite some recent relevant sources.**  **Grzegorzewski, F., Rohn, S., Quade, A., Schr¨oder, K., Ehlbeck, J., Schl¨uter, O., & Kroh, L. W. (2010b). Reaction chemistry of 1,4-benzopyrone derivates in non-equilibrium low-temperature plasmas. Plasma Processes and Polymers, 7(6), 466–473. https://doi.org/10.1002/ppap.200900140**  **Grzegorzewski,**  **Liu ZC, Liu DX, Chen C et al (2015) Physicochemical processes in the indirect interaction between surface air plasma and deionized water. J Phys D Appl Phys 48(49):495201**  **Adhikari, B. C., Lamichhane, P., Lim, J. S., Nguyen, L. N., & Choi, E. H. (2021). Generation of reactive species by naturally sucked air in the Ar plasma jet. Results in Physics, 30, 104863. https://doi.org/10.1016/j.rinp.2021.104863** |  |
| Minor REVISION commentsIs the language/English quality of the article suitable for scholarly communications? | Yes, but there some minor revisions required. Below is a nonexhaustive comments:  Page 46, Frist paragraph: It investigated .....  It is shown in sub-section 2.2 ....  Page 46: In the overall Introduction on this page, there are many disjoints statements, inferences to other subsection and chapters which would be very difficult for the targets audience to comprehend. I suggest all these paragraphs on page 46 should be revised and each paragraph should systematically explain the important message the paragraph is trying to portray.  Page 49, 2nd to the last paragraph:  The best sensitivity of impurity detection was obtained with N2 , having been detected.... |  |
| Optional/General comments | Fig. 2.1: This figure is not clear, I will suggest that authors should redraw it rather than relying on source that is not visible.  Fig. 3 is not clear and visible; I suggest improving it by sourcing for the original figure from the source.  The numbering of all the equations is not organized. I suggest the authors to number their equation systematically, starting for equation (a) as (1) .....  Fig. 2.4: Comment same as in previous figure.  Equations 11, 12 and others: Authors should use Microsoft Word equation editor to write these equations properly. |  |

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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:** | **Aliyu Idris Muhammad** |
| **Department, University & Country** | **Bayero University, Nigeria** |