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| Book Name: | **Plasmas Afterglows with N2 for Surface Treatments synthesis 2024** |
| Manuscript Number: | **Ms\_BPR\_3686.6** |
| Title of the Manuscript:  | **Optical Spectroscopy of Surfaces Plasmas Treatments** |
| 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.** | This manuscript is significant for the scientific community as it provides valuable insights into advanced thin-film deposition techniques using CVD and magnetron sputtering under plasma conditions. The detailed characterization of reactive plasmas, including the measurement of metastable atom and ion densities, contributes to a deeper understanding of the processes influencing film quality and properties. By highlighting methods to minimize damage, such as the use of CVD for 𝑎-SiH,a-SiH films, the study addresses practical challenges in film deposition, which is crucial for applications in electronics, coatings, and material science. I appreciate this manuscript for its robust experimental approach and its potential to inform further research, although it could benefit from a more detailed discussion of the broader applications and implications of the findings. |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | **Yes** |  |
| 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. | **Yes, Its fine** |  |
| **Are subsections and structure of the manuscript appropriate?** | **Yes, the structure is appropriate** |  |
| **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.** | This manuscript appears to be scientifically robust and technically sound due to its comprehensive approach to plasma diagnostics and thin-film deposition. The use of both emission and absorption spectroscopy for characterizing plasmas demonstrates a solid methodological foundation, ensuring accurate monitoring of metastable atom and ion densities. Furthermore, the distinction between CVD and magnetron sputtering processes and their respective advantages, such as avoiding damage to films or enabling precise plasma control, is clearly articulated and supported by experimental data. The focus on reactive plasmas and the specific characterization of titanium-based materials further strengthens its technical credibility, as these are critical for various industrial applications. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.****-** | **Yes** |  |
| Minor REVISION commentsIs the language/English quality of the article suitable for scholarly communications? | Yes |  |
| Optional/General comments | This manuscript provides a valuable contribution to the understanding of thin-film deposition processes, particularly in the characterization of reactive plasmas for materials like a-SiHa\text{-SiH}a-SiH and TiN\text{TiN}TiN. The detailed experimental techniques and focus on minimizing plasma-induced damage enhance its relevance for both research and industrial applications. Overall, it offers scientifically rigorous insights with practical implications. |  |

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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: | **Anitha Rexalin Devaraj** |
| Department, University & Country | **India** |