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| Book Name: | **Advancements in Science and Technology: Paving the Way to a Sustainable Future** |
| Manuscript Number: | **Ms\_BPR\_4465.7** |
| Title of the Manuscript: | **THE GREEN CHEMISTRY REVOLUTION: FROM PRINCIPLES TO PRACTICE** |
| Type of the Article | **BOOK CHAPTER** |

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| PART 1: Comments | | |
|  | Reviewer’s comment **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | 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. A minimum of 3-4 sentences may be required for this part.** | This book chapter provides an inclusive overview on ‘The Green Chemistry Revolution: From Principles to Practice’. The paper illustrates about the The Green Chemistry Revolution, which focuses on designing chemical products and processes that minimize environmental impact. It follows principles like waste prevention, energy efficiency, and using renewable resources. Industries are adopting green solvents, biodegradable materials, and sustainable synthesis methods. Advances in catalysis and biomimicry further drive eco-friendly innovations. This shift promotes safer chemicals, reduces pollution, and supports a sustainable future. |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | Yes, title of the article ‘The Green Chemistry Revolution: From Principles to Practice’ is completely suitable. |  |
| 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, the abstract of the article is comprehensive**. There is no need to add or delete something in this section.** |  |
| **Is the manuscript scientifically, correct? Please write here.** | Yes, the manuscript is completely scientifically correct. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.**  **-** | Author should incorporate at least 10 more recent references in this chapter. |  |
| Is the language/English quality of the article suitable for scholarly communications? | Structure of sentences and grammatical usage are appropriate in every section and I appreciate that the author maintains their standard. |  |
| Optional/General comments | The paper is well-organized, with clear headings and subheadings. The approach ensures that readers can easily follow the information. I have recognized the efforts the Authors have put into this work and the submitted manuscript is OK for ‘Accept’ after minor improve as pointwise.   1. **Preface and Historical Context and Evolution**:   I appreciate that the author has provided a thorough literature review and comprehensive background information in Preface and Historical Context and Evolution section. In this part author clearly part elucidates about The Green Chemistry Revolution, which emerged in the 1990s as a response to growing environmental concerns and stricter regulations. It was formalized through the 12 Principles of Green Chemistry by Paul Anastas and John Warner. Over time, industries have adopted sustainable practices, leading to innovations in eco-friendly materials and cleaner production methods.   1. **The 12 Principles of Green Chemistry:**   In this section author clearly elucidates the 12 Principles of Green Chemistry emphasize waste prevention, atom economy, safer solvents, renewable feedstocks, and energy efficiency. Over time, industries have adopted these guidelines to develop sustainable and less hazardous chemical processes.   1. **Green Chemistry in Practice**:   In this section author clearly descripted about application of green chemistry. Green chemistry is applied in pharmaceuticals through eco-friendly drug synthesis, reducing hazardous waste. In agriculture, it promotes bio-based pesticides and sustainable fertilizers. The textile industry uses non-toxic dyes and water-efficient processes. Additionally, renewable energy technologies benefit from green chemistry in battery development and biofuel production.   1. **Case Study: Green Detergents:**   This section is very well written and commendable. Here, author explains about Green detergents, which follow eco-friendly principles, including biodegradable ingredients that minimize environmental harm, plant-based or renewable resources instead of harsh chemicals, and sustainable packaging to reduce plastic waste. They are designed to be effective while being gentle on aquatic life and human health.   1. **Educational Initiatives**:   This section of the chapter is very well written. Here, author stated about Educational initiatives for the Green Chemistry Revolution focus on integrating sustainable practices into scientific learning. These include curriculum development in schools and universities, hands-on lab experiences with eco-friendly experiments, industry-academia collaborations for real-world applications, and public outreach programs to raise awareness. Online courses, workshops, and policy-driven education further drive the transition from principles to practice.   1. **Challenges and Future Directions:**   This section of the chapter is well described and author has specified about the current challenges and future scope of Green Chemistry include high implementation costs, scalability issues, and resistance from traditional industries. Limited availability of sustainable raw materials and the need for innovative catalysts also pose obstacles. Regulatory frameworks must evolve to support widespread adoption. Future directions focus on advancing bio-based alternatives, and circular economy models. Collaboration between academia, industry, and policymakers is essential for accelerating green chemistry innovations.   1. It would be great if the author added an image or schematic diagram or table, so that the chapter looks more promising. 2. Please Acknowledge if any.   Overall, I acknowledge the authors' efforts and believe the submitted book chapter is suitable for acceptance after minor revisions. |  |

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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: | **Amit Kumar Kundu** |
| Department, University & Country | **Sripat Singh College, (Under University of Kalyani), India** |