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| Book Name: | [Chemical and Materials Sciences: Research Findings](https://www.bookpi.org/bookstore/product/chemical-and-materials-sciences-research-findings-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_4617** |
| Title of the Manuscript: | **Determination of Polymer Monomers in Polyhydroxyalkanoates using HPLC Analysis** |
| 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 manuscript presents a significant advancement in the field of biodegradable plastics by developing a simple and efficient quantification method for polyhydroxyalkanoates (PHA) using high-performance liquid chromatography (HPLC) with alkaline hydrolysis pretreatment. Given the urgent need for sustainable alternatives to conventional plastics, this study contributes valuable methodological improvements that enable more accurate and rapid analysis of PHAs, particularly poly(3-hydroxybutyrate-co-3-hydroxyvalerate) (PHBV). By offering a reliable alternative to gas chromatography (GC) analysis, which is time-consuming and requires extensive sample preparation, this research facilitates broader applications in industrial and environmental studies. The findings have the potential to streamline the assessment of biodegradable plastics, thereby supporting further innovations in sustainable material development. |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | The title **"Determination of Polymer Monomers in Polyhydroxyalkanoates using HPLC Analysis"** effectively conveys the study's focus on analyzing PHA monomers through HPLC. It is clear, concise, and relevant to the research, making it suitable for the scientific community. |  |
| 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 effectively summarizes the study, clearly outlining the research aim, methodology, and key findings. It provides a strong foundation for understanding the significance of the developed HPLC-based quantification method for PHAs. |  |
| **Is the manuscript scientifically, correct? Please write here.** | The manuscript appears to be scientifically sound, with well-documented methodology, experimental validation, and logical conclusions. The use of HPLC with alkaline hydrolysis for PHA quantification is well-supported by data and comparisons with GC analysis. Overall, the study follows a rigorous scientific approach, making the findings reliable and valuable for future research. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.**  **-** | The manuscript includes a comprehensive list of references, covering both foundational studies and recent research. Many citations are from reputable journals, ensuring the scientific credibility of the study. However, incorporating a few more **recent references (2022–2024)** related to advancements in PHA quantification techniques or biodegradable plastics could further strengthen the study. |  |
| Is the language/English quality of the article suitable for scholarly communications? | The language quality of the article is generally suitable for scholarly communication, with clear explanations and a structured scientific approach. |  |
| Optional/General comments | The manuscript presents a well-structured and scientifically valuable study on the quantification of PHAs using HPLC with alkaline hydrolysis pretreatment. The methodology is sound, and the findings contribute to the field of biodegradable plastics. Minor refinements in language and the inclusion of a few more recent references could further enhance the clarity and impact of the study. Overall, it is a well-conducted research work with practical applications in sustainable material science. |  |

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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: | **K Sakthi Vadivel** |
| Department, University & Country | **Dr. Mahalingam College of Engineering And Technology, India** |