

Abstract Submitted  
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**Stereochemical Analysis of Biodegradable Chemicals: Applications in Nano-material Science** MINSEO KANG, NLCS JEJU — The demand for sustainable polymer molecules (e.g. pharmaceuticals) and the limited development of safe chemicals are growing problems of global concern. The accumulation of polymer-based drug carriers not only poses a significant health risk but also highlights the disadvantages of the body's drug delivery systems. For example, the poor biodegradability of polystyrene (PS), poly(methyl methacrylate) (PMMA), and poly(N Isopropylacrylamide) limit the materials' potential ability to aid in drug delivery. In this paper, aliphatic polyesters and modern molecules were studied to determine their successes in biodegradability and biocompatibility. Due to the limitless combinations of metals and linkers in the chelators, such as porphyrins and EDTA, physicochemical properties of the chelators were reviewed. Natural porphyrins are preferable to synthetic organic molecules because they are less toxic and biodegradable. Analytical and computational techniques were used for quantitative and qualitative characterizations of new biodegradable molecules in this research.

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