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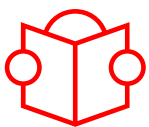


Research field

**Polymer Science and Organic
Chemistry**

PhD title

**Glycopolymers as light stimuli-
responsive systems for controlled
release fertilization**



Keywords

- Photoresponsive materials
- Glycopolymers
- Controlled release fertilizers
- Sustainable agriculture

Summary

With the global population projected to reach 9.6 billion by 2050, increasing food demand necessitates more efficient agricultural practices. Conventional fertilizers, while essential for boosting crop yields, suffer from rapid nutrient loss due to quick dissolution. This project aims to innovate fertilization techniques by adapting drug delivery technology to agriculture. By developing light-stimulated polymer

coatings for fertilizers, nutrients can be precisely released when plants need them. The research focuses on synthesizing photoresponsive glycopolymers grafted onto polysaccharides, creating smart carriers for trace elements. These materials, activated by UV light, will ensure efficient nutrient uptake and minimal environmental impact, promoting sustainable agricultural practices.



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