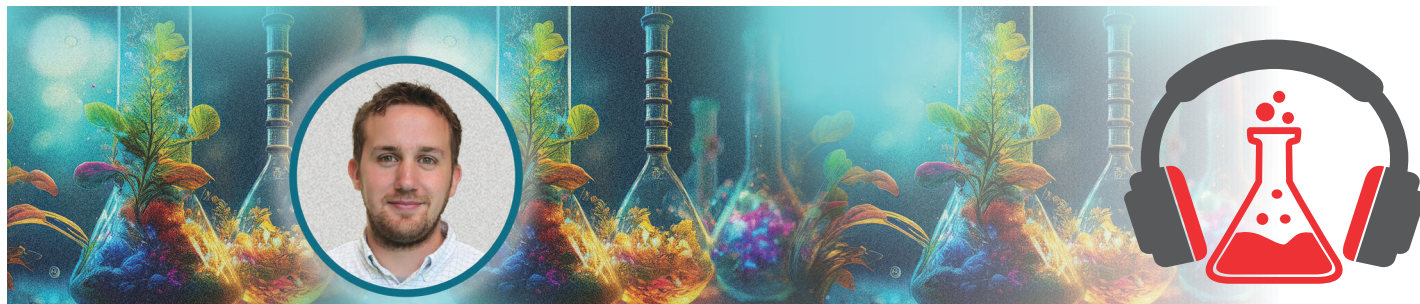


Bringing Chemistry to Life

a podcast series

Season 5, Episode 12

The rise and adoption of biocatalysis



Episode Summary

Enzyme catalysis and directed evolution have provided new strategies and possibilities for synthetic organic chemistry. Dr. Todd Hyster, Professor of Chemistry and Principal Investigator of the Hyster Lab at Princeton University, is at the forefront of research in these areas. Join us for an amazingly insightful conversation between Todd and Paolo on this topic and the chemical transformations it's enabling.

Episode Notes

Some might argue that strategies for synthetic organic chemistry have grown a bit stale, but Dr. Todd Hyster, Professor of Chemistry and Principal Investigator of the Hyster Lab at Princeton University, might tell you otherwise.

Todd fell in love with organic chemistry early in his education, but it wasn't until he got turned on to enzyme catalysis that he found his true calling. He's built a career using engineered enzymes to facilitate chemical transformations that would otherwise not be possible. Specifically, he and his team focus on photo-enzymatic catalysis where they use a combination of light and engineered proteins to drive new chemical transformations.

Join us to learn about his work, the methods involved, and the types of transformations being accomplished, which is beyond enantioselective synthesis, by the way. This stimulating conversation delves into the tactical and philosophical aspects of the synthetic chemistry, enzyme catalysis, and even the realities of academic funding and industry collaboration.

About Our Guest

Todd Hyster, PhD

Professor of Chemistry
Princeton University

Todd's Recent Publications:

- [An asymmetric \$sp^3\$ - \$sp^3\$ cross-electrophile coupling using 'ene'-reductases](#)
- [Enantioselective decarboxylative alkylation using synergistic photoenzymatic catalysis](#)
- [Regioselective Radical Alkylation of Arenes Using Evolved Photoenzymes](#)

Todd's Content Recommendations:

- [American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer](#), a book by Kai Bird & Martin J. Sherwin
- [Moneyball: The Art of Wining an Unfair Game](#), a book by Michael Lewis
- [The Common Man Program](#), a podcast that Todd enjoys
- [The Apartment Brewer](#), a series on homebrewing tips and tricks
- [Freakonomics Radio](#), an exploration of things you always thought you knew, but didn't

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