



## BIOMIMETIC CATALYSTS FOR DIVERSE INDUSTRIAL APPLICATIONS IN CHEMICAL REACTIONS

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### The Invention

UW-Madison researchers have developed a method to synthesize organocatalysts that can be engineered to mimic biological enzymes for use in a variety of industrially relevant chemical reactions. The organocatalyst comprises a chemical catalyst that is made by imidation of an amine-containing compound to form an N-substituted maleimide and appending the N-substituted maleimide on a furan-containing compound by Diels-Alder reaction and hydrogenation. The N-substituted maleimide may also be synthesized by reacting a protected maleimide with a compound containing a primary alkyl halide moiety. The organocatalyst has been engineered to append chemical functionalities of amino acids such as glutamic acid for catalyzing the hydrolysis of lactose. The organocatalyst further comprises a support to immobilize the chemical catalyst which plays the role of a scaffold to stabilize catalytic active sites and bind the reactants nearby the active sites, similar to a protein scaffold in biological catalysts.

### Additional Information

#### For More Information About the Inventors

- [George Huber](#)

#### Tech Fields

- [Clean Technology : Biobased & renewable chemicals & fuels](#)
- [Materials & Chemicals : Catalysts](#)

For current licensing status, please contact Jennifer Gottwald at [jennifer@warf.org](mailto:jennifer@warf.org) or 608-960-9854