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Heterogeneous Hydroxyl-Directed Hydrogenation over a Pd-M Alloy Catalyst

A recyclable heterogeneous catalyst achieves high stereoselectivity for pharma and specialty chemicals.

Currently, there are no heterogeneous catalysts available for high yielding and stereoselective hydrogenation of hydroxyl-containing substrates. Researchers at Purdue University have developed a Pd-Cu nanoparticle heterogeneous catalyst for this application that demonstrates high conversion of up to 99% with diastereoselectivity as high 17:1 for the substrates examined. Because this is a supported catalyst, this also means that it can be easily recycled. Advances in this area have applications in pharmaceuticals and specialty chemicals.

Advantages:

- More cost effective than homogeneous alternatives

- Recyclable

- Heterogeneous

Applications:

- Pharmaceuticals

- Specialty chemicals

Technology Validation:

This technology has been validated through laboratory demonstration.

TRL: 4

Intellectual Property:

Provisional-Patent, 2021-01-11, United States

Utility-Gov. Funding, 2022-01-11, United States

Technology ID

2021-LI-69317

Category

Chemicals & Advanced Materials/Specialty & Performance Chemicals

Chemicals & Advanced Materials/Green & Bio-Based Chemistry

GreenTech/Circular Economy & Waste Reduction

Further information

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