Nanotech discovery may green chemical manufacturing

February 16 2010

A new nanotech catalyst developed by McGill University Chemists Chao-Jun Li, Audrey Moores and their colleagues offers industry an opportunity to reduce the use of expensive and toxic heavy metals. Catalysts are substances used to facilitate and drive chemical reactions. Although chemists have long been aware of the ecological and economic impact of traditional chemical catalysts and do attempt to reuse their materials, it is generally difficult to separate the catalyzing chemicals from the finished product. The team's discovery does away with this chemical process altogether.

Li neatly describes the new catalyst as "use a magnet and pull them out!" The technology is known as nanomagnetics and involves nanoparticles of a simple iron magnet. Nanoparticles are sized between 1 and 100 nanometres (a strand of hair is about 80,000 nanometres wide). The catalyst itself is chemically benign and can be efficiently recycled. In terms of practical applications, their method can already be used to generate the reactions that are required for example in pharmaceutical research, and could in the future be used to achieve reactions necessary for research in other industries and fields.

The discovery was published in *Highlights in Chemical Science* on January 18, 2010. Li is known as one of the world leading pioneers in green chemistry, an entirely new approach to the science that tries to avoid the use of toxic, petrochemical-based solvents in favour of basic substances.

PHYS.ORG

Provided by McGill University

Citation: Nanotech discovery may green chemical manufacturing (2010, February 16) retrieved 23 April 2024 from https://phys.org/news/2010-02-nanotech-discovery-green-chemical.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.