



New Application Developments in PGMs – June 2011

Madison chemists devise better way to prepare workhorse molecules: Palladium.

University of Wisconsin-Madison, 09 June 2011

<http://www.news.wisc.edu/releases/16735>

Writing in Science (<http://dx.doi.org/10.1126/science.1204183>), a team led by University of Wisconsin-Madison chemistry Professor Shannon Stahl reports a new, environmentally friendly way to make substituted aromatic molecules that can be customized for different industrial needs. The method devised by Stahl and Wisconsin colleagues Yusuke Izawa and Doris Pun owes its success to the discovery of a new palladium catalyst. The catalyst gives chemists a way to peel off hydrogen from cyclic molecules to form aromatic products with the desired substitution patterns already in place. The hydrogen removed by the palladium catalyst is combined with oxygen, and water is formed as the only byproduct.

Further to:

Science News Release PTN: UW-Madison chemists devise better way to prepare workhorse molecules

University of Wisconsin-Madison, 6/9/11

<http://www.news.wisc.edu/releases/16735>

University of Delaware Research Foundation grant: Electrocatalytic reduction of carbon dioxide to chemical fuels: Palladium.

UDaily, 10 June 2011

<http://www.udel.edu/udaily/2011/jun/UDRF-recipients-061011.html>

Concerns over greenhouse gas emissions and climate change are propelling research forward on renewable energy. Joel Rosenthal, assistant professor of chemistry and biochemistry, will explore the development of nickel and palladium electrocatalysts that will freely give away electrons when they react with carbon dioxide, thus chemically reducing the greenhouse gas into energy-rich carbon monoxide or methanol fuels.

Visible improvement to light harvesting: iridium.

ChemistryViews, 22 June 2011.

http://www.chemistryviews.org/details/ezone/1184147/Visible_Improvement_to_Light_Harvesting.html

Image: <http://www.chemistryviews.org/common/images/thumbnails/source/130b7333e31.jpg>

Jianzhang Zhao et al. of the Dalian University of Technology, China, report in the European Journal of Inorganic Chemistry significantly long room-temperature triplet excited state lifetimes for cyclometallated, coumarin-containing iridium(III) complexes with strong absorption in the visible range.

Breaking the carbon-fluorine bond: Iridium.

Chemistry World, 23 June 2011

<http://www.rsc.org/chemistryworld/News/2011/June/23061103.asp>

An unexpected route. © Science / AAAS, http://www.rsc.org/images/Flourine_410_tcm18-203596.jpg

Alan Goldman with researchers at Rutgers University in New Jersey have discovered a new way to break the bond between carbon and fluorine atoms by using a catalyst based on an iridium centre clamped between two bulky dialkylphosphino groups. This is important because many pharmaceuticals and agrochemicals incorporate C-F bonds.

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