Scientists synthesize renewable nylon monomers with poplar wood

February 14 2022

Credit: CC0 Public Domain

A research team led by Prof. Zhang Tao and Prof. Li Ning from the Dalian Institute of Chemical Physics (DICP) of the Chinese Academy of Sciences (CAS) has synthesized renewable nylon monomers with poplar

wood.

This study was published in *Chem Catalysis* on Feb. 14.

The researchers explored the hydrogenolysis of poplar wood over the Pd/C catalyst in the toluene/NaCl aqueous solution biphase system.

They found that the total carbon yield of cyclopentanone, 3-methylcyclopentanone, 2,5-hexanedione and 2,5-dimethylfuran reached to 39.2% under the investigated conditions. These compounds could be further converted to nylon monomers such as methyl-glutaric acid, glutaric acid, dimethyl methyl adipate and dimethyl adipate.

"This work has great significance for the catalytic conversion of raw biomass into important chemicals," said Prof. Li.

More information: Ning Li, Synthesis of renewable nylon monomers with poplar wood, *Chem Catalysis* (2022). DOI: 10.1016/j.checat.2022.01.015. www.cell.com/chem-catalysis/fu … 2667-1093(22)00048-3

Provided by Chinese Academy of Sciences