



Showcasing research from Professor Jungho Jae *et al.* from Pusan National University, Busan, South Korea.

Water-assisted single-step catalytic hydrodeoxygenation of polyethylene terephthalate into gasoline- and jet fuel-range cycloalkanes over supported Ru catalysts in a biphasic system

Here we unveil an efficient novel green method to convert polyethylene terephthalate (PET) waste into fuel-range C_6 - C_8 cyclic hydrocarbon fuels using a single-step water-assisted hydrodeoxygenation (HDO) process over TiO_2 -supported Ru catalysts in a water/oil biphasic system. Our study unequivocally demonstrates that the increased selectivity towards cyclic hydrocarbons in the water-assisted biphasic reaction medium is attributed to the Ru/ TiO_2 -mediated formation of stable emulsion droplets, which, in turn, function as the unique reaction interface for the dual hydrolysis and hydrodeoxygenation.

As featured in:



See Jungho Jae *et al.*, *Green Chem.*, 2023, 25, 8570.