

Life-cycle assessment of ruthenium catalysts for asymmetric transfer hydrogenation

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Platinum Group Metals (PGMs) are critical materials enabling modern life:[1] from transportation, to food, to medicines, to chemical production, etc., and their environmental impact, recyclability and future availability are widely debated.[2],[3] Our new estimation of the carbon footprint of ruthenium catalysts for asymmetric transfer hydrogenation will be presented, together with the implications for sustainability models of their applications.[4]

[1] <https://matthey.com/products-and-markets/pgms-and-circularity>

[2] D. Arnold, R. Higgins, D. Holdsworth, *Chim. Oggi – Chem. Today*, **2024**, 42(6), 16-18.

[3] S. Facchetti, A. Zanolli-Gerosa, J. Patrick, M. Ryan, *Chim. Oggi – Chem. Today*, **2025**, 43(3), 32-35.

[4] S. Facchetti, J. Patrick, A. Zanolli-Gerosa, *Submitted*.