

Mo- and W-based Schrock-type catalysts in organic synthesis

Hasan Mehdi, S. Balogh, Á. Bucsa, H. Gulyás, C. Hegedüs, K. Lőrincz, L. Ondi, J. Varga
XiMo Hungary Ltd.
Berlini Park, Budapest, Hungary
hasan.mehdi@ximo-inc.com

Since its discovery, olefin metathesis has become a valuable tool in the chemical industry for large-scale transformations toward hydrocarbon-derived bulk chemicals. Despite the extensive research in the field, the application of homogeneous catalysts remains relatively rare.

Our research aims to exploit the high potential of ruthenium-, molybdenum-, and tungsten-based olefin metathesis catalysts for producing high-value added organic molecules. Their high activity allows the use of catalysts at ppm levels, making these processes industrially viable. Furthermore, some of these metal complexes exhibit remarkable stereoselectivity.

In our presentation, we will showcase examples of the synthesis of valuable organic molecules with high *cis*¹-, *trans*² -, and, in a few cases, high enantioselectivity³. Additionally, we offer solutions to overcome the intrinsic sensitivity of these complexes, enabling the examination and the application of olefin metathesis under less stringent conditions.^{4,5} These findings represent important steps toward the industrial production of agrochemicals,¹ fragrances,⁶ and bulk chemicals from renewable resources.⁷

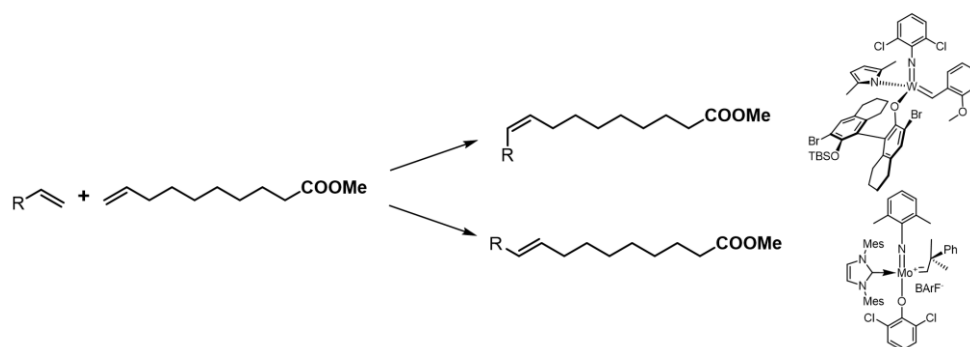


Figure 1. Examples for *cis*- and *trans*-selective cross metathesis applications.

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