

Rational and then serendipitous formation of aza analogues of Hoveyda-type catalysts containing a chelating ester group leading to a polymerization catalyst family.

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Streszczenie

Analogues of the well-known Hoveyda–Grubbs catalyst bearing both a chelating ester function and a chelating nitrogen atom were obtained. These complexes behave differently depending on the character of the chelating amine. Complexes containing a secondary amine underwent unexpected spontaneous oxidation of the amine group, leading to the Schiff base analogues. In contrast, complexes containing a tertiary amine were prone to intramolecular cyclization in the presence of a base (Et_3N). Probing the activity of such (pre)catalysts in ring-closing metathesis reactions (RCMs) revealed their dormant character and excellent thermo-switchability. In particular, complexes bearing an iminium nitrogen fragment were found to be very useful in a delayed ring-opening metathesis polymerization (ROMP) and were therefore commercialized.

Słowa kluczowe

catalysis, imines, latent catalysts, olefin metathesis, polymerization, ruthenium

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