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Title: Utilization of modified polyethylenes as macroscopic ligands

Termination of growing polyethylene (PE) chain by silane $\text{HSiR}^1\text{R}^2\text{R}^3$ leads to polymers bearing chain-end silyl group (SiPE). These materials can be further modified to form polymers terminated by silanol group (PE-SiOH). Using suitable default conditions, a modified PE with relatively low molecular weight ($M_n \sim 1000$ Da) and useful solubility profile can be obtained. Due to the presence of reactive silanol or hydrosilane groups, such materials can serve as a support for grafting a wide range of metals. The aim of the thesis is to verify the possibility of grafting metals by chemical bonding on a modified PE (which in this particular case can be seen as a "slightly larger" ligand). Prepared materials will be tested with regard on their possible use in catalysis. This research is interdisciplinary at the border between inorganic (coordination chemistry) and physical chemistry (polymers, catalysis).

Keywords: supported complexes, modified polyethylene, catalysis

