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Optimization of the Conditions of Oligomerization and Polymerization Processes of Selected Olefins with the Use of Complex Compounds of Transition Metal Ions

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Abstract : Polyolefins are a group of materials used today in all areas of life. They are used in the food, domestic and other industries. In particular, polyethylene and polypropylene have found application in the production of packaging materials, pipes, containers, car parts as well as elements of medical equipment, e.g. syringes. Optimization of the polymerization and oligomerization processes of selected olefins is a very important stage before the technological implementation of polyolefin production. The purpose of the studies is to determine the conditions for ethylene polymerization as well as 3-buten-2-ol and 2-chloro-2-propen-1-ol oligomerization with the use of oxovanadium(IV) dipicolinate complexes with N-heterocyclic ligands. Additionally, the studies aims to determine the catalytic activities of the dipicolinate oxovanadium(IV) complexes with N-heterocyclic ligands in the studied polymerization and oligomerization processes.

Keywords : buten-2-ol, dipicolinate, ethylene, polymerization, oligomerization, vanadium
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