University of Gdańsk
Technology Transfer Office

chemistry

Coordination compounds of oxovanadium(IV) and dioxovanadium(V) with anions

About technology

The subject of the invention are coordination compounds of **oxovanadium(IV)** with the following anions: thiodioctanoate (TDA), iminodioctanoate (IDA), dipicolinate (dipic), diglycolate (ODA), N-methyliminodiacetate (mIDA) and 4,4'-dimethoxy-2,2'-bipyridyl (dmbipy), 1,10-phenanthroline (phen), 2,2'-bipyridyl (bipy) or dimethyl sulphoxide (DMSO) and **dioxovanadium(V)** coordination compounds containing a dipicolinate anion (dipic) in the coordination sphere and protated molecules of 2-phenylpyridine (2-ppyH) or 2-(4-methylphenyl)pyridine (tpyH) as counterions.

Applications:

- production of polyethylene and its copolymers (including LDPE, HDPE),
- synthesis of functional materials with adjustable molecular weight,
- industrial implementations replacing classic Ziegler–Natta or metallocene catalysts.

Technological advantages of the compounds:

- higher activity with lower complex consumption,resistance to air,
- ability to carry out synthesis reactions in an aqueous environment,
- lower production costs (no precious metals, simple synthesis).

Research Team

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IP Protection

The invention is the subject of patent application protection:

- Poland: **P.453276** and **P.453278**.

Implementation progress

TRL 5 –Technology validated in an environment that stimulates real-world conditions.

Cooperation opportunities

- Licensing agreement
- Transfer of ownership
- Partnership for further research

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