

## 2,4,6-Triphenylpyridinium: a bulky, highly electron-withdrawing substituent that enhances properties of nickel(II) ethylene polymerization catalysts.

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### Streszczenie

The reactivity of Ni<sup>II</sup> and Pd<sup>II</sup> olefin polymerization catalysts can be enhanced by introduction of electron-withdrawing substituents on the supporting ligands rendering the metal centers more electrophilic. Reported here is a comparison of ethylene polymerization activity of a classical salicyliminato nickel catalyst substituted with the powerful electron-withdrawing 2,4,6-triphenylpyridinium (trippy) group to the -CF<sub>3</sub> analogue. The trippy substituent is substantially more electron-withdrawing ( $\sigma_{\text{meta}}=0.63$ ) than the trifluoromethyl group ( $\sigma_{\text{meta}}=0.43$ ) which results in a ca. 8-fold increase in catalytic turnover frequency. An additional advantage of trippy is the high steric bulk relative to the trifluoromethyl group. This feature results in a four-fold increase in polymer molecular weight owing to enhanced retardation of chain transfer. A significant increase in catalyst lifetime is observed as well.

### Słowa kluczowe

homogeneous catalysis, ligand design, nickel, polyolefins

### Adres publiczny

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### Strona internetowa wydawcy

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