



Copper(II) Complexes with 3-(2-Pyridyl)-5*R*-1,2,4-Triazoles: The Influence of Noncoordinating Substituent in Ligand on Structure and Potential for Oxidative Cleavage of Alkene Bonds and Henry Coupling

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Kolekcja

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Streszczenie

Twelve new mono- and polynuclear Cu(II) complexes derived from 3-(2-pyridyl)-5*R*-1,2,4-triazoles (HLⁿ, where R = Me, *n* = 1; R = Et, *n* = 2; R = *i*-Pr, *n* = 3; R = *t*-Bu, *n* = 4; R = Ph, *n* = 5; R = Bz, *n* = 6) containing other ligands, such as nitrate, aqua, or dimethylformamide (dmf), were obtained and structurally characterized. Nine compounds were tested as selective catalysts for the microwave-assisted oxidation of neat styrene to benzaldehyde (up to 85% yield) via copper-peroxide reactive species and its further ultrasound-assisted conversion (up to 99% yield) to the *syn*- and *anti*- β-nitroethanol mixture with a remarkable diastereoselectivity to the *anti*-isomer.

Słowa kluczowe

3-(2-pyridyl)-1,2,4-triazoles, C–C coupling reaction, copper(II) complexes, heterogeneous catalysis, microwave-assisted oxidation

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