

**Название публикации:**

Mild and Regioselective Hydroxylation of Methyl Group in Neocuproine: Approach to an N,O-Ligated Cu<sub>6</sub> Cage Phenylsilsesquioxane

**Авторы:**

Bilyachenko, A.N.a,b, Levitsky, M.M.a, Khrustalev, V.N.b, Zubavichus, Y.V.c, Shul'Pina, L.S.a, Shubina, E.S.a, Shul'Pin, G.B.d,e

- a. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Vavilov Str., 28, Moscow, Russian Federation
- b. Peoples' Friendship University of Russia (RUDN University), Miklukho-Maklay Str., 6, Moscow, Russian Federation
- c. National Research Center kurchatov Institute, Akademika Kurchatova pl., 1, Moscow, Russian Federation
- d. Semenov Institute of Chemical Physics, Russian Academy of Sciences, ulitsa Kosygina, dom 4, Moscow, Russian Federation
- e. Plekhanov Russian University of Economics, Stremyannyi pereulok, dom 36, Moscow, Russian Federation

**Сведения об издании:**

Organometallics

Volume 37, Issue 2, 22 January 2018, Pages 168-171

**Аннотация:**

The self-assembly synthesis of Cu(II)-silsesquioxane involving 2,9-dimethyl-1,10-phenanthroline (neocuproine) as an additional N ligand at copper atoms was performed. The reaction revealed an unprecedented aerobic hydroxylation of only one of the two methyl groups in neocuproine to afford the corresponding geminal diol. The produced derivative of oxidized neocuproine acts as a two-centered N,O ligand in the assembly of the hexacopper cage product [Cu<sub>6</sub>(Ph<sub>5</sub>Si<sub>5</sub>O<sub>10</sub>)<sub>2</sub>·(C<sub>14</sub>H<sub>11</sub>N<sub>2</sub>O<sub>2</sub>)<sub>2</sub>] (1), coordinating two of the six copper centers in the product. Two siloxanolate ligands [PhSi(O)O]<sub>5</sub> in the cis configuration coordinate to the rest of the copper(II) ions. Compound 1 is a highly efficient homogeneous precatalyst in the oxidation of alkanes and alcohols with peroxides.

**Ключевые слова:**

Copper, Hydroxylation, Ligands, Self assembly, Cis configurations, Copper centers, N ,O ligands, Oxidation of alkanes, Phenylsilsesquioxane, Regio-selective, Self-assembly synthesis, Silsesquioxanes, Chelation