Copper silsesquioxanes and their catalytic properties

Astakhov G.S.[1,2], Bilyachenko A.N.[1,2], Levistky M.M.[2]

[1] *RUDN University, 117198, Moscow, Miklukho-Maklaya str. 6;*
[2] *INEOS RAS, 11999, Moscow, Vavilova St. 2.*
e-mail: astakhovgrigorii@gmail.com

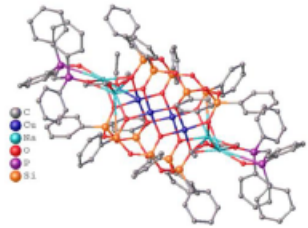
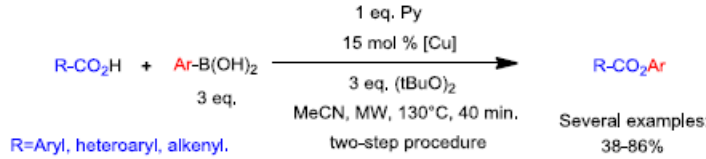


Figure 1. Molecular structure Cu_4Na_4-silsesquioxane complex with $dppmO_2$

The cage-like structures based on metallsesquioxanes are attracted the attention of many research groups, because they demonstrate intriguing catalytic properties [1]. In recent years the Chan-Evans-Lam (CEL) coupling reaction, copper-catalyzed interaction of H-nucleophiles (amines, amides, carbamates, phenols *etc.*) and boronic acids, became popular instrument of fine organic synthesis [2]. Here we show that several copper-based cage-like silsesquioxanes catalyze coupling of boronic acids and carboxylic acids under microwave (MW) conditions. In comparison to published results [3a-e], Cu_4Na_4 complex (**Fig. 1**) exhibit high catalytic activity on conditions of low loading of copper source and added base [4]. To the best of our knowledge, this is a first example of CEL reaction by making C-O bond in MW.



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