Structural investigation of silica-supported copper (I) surface sites by IR spectroscopy

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The rational design of heterogeneous catalysts requires detailed structural understanding of surface sites for the development of structure reactivity relationships. One approach for developing well-defined heterogeneous catalysts is Surface Organometallic Chemistry (SOMC). SOMC relies on selectively anchoring metal complexes to the surface of oxide-supports via grafting.[1] This ultimately allows for the generation and subsequent study of well-defined metal sites on surface. Here will be described the synthesis of well-defined silica-supported copper (I) site(s) and their characterization by infrared spectroscopy using CO as probe molecule.

[1] Christophe Copéret, Aleix Comas-Vives, Matthew P. Conley, Deven P. Estes, Alexey Fedorov, Victor Mougel, Haruki Nagae, Francisco Núñez-Zarur, and Pavel A. Zhizhko, *Chemical Reviews*, **2016**, 116, 323−421.