

# Sulfonated octa-substituted Co(II) phthalocyanines immobilized on silica matrix as catalyst for Thiuram E synthesis

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## Abstract

© 2018 John Wiley & Sons, Ltd. Silica nanoparticles were obtained during the work according to two different sol-gel methods. In first one Schtrober's technique and series of cobalt phthalocyanine metal complexes varying in peripheral substituents were used. Second method was performed using the same complexes but differed in applying surface-active substance (SAS) and two precursors - tetraethoxysilane (TEOS) and aminopropyltrimethoxysilane (APTOS). All obtained hybrid materials were analyzed via SEM, the size of single particle was studied, which in all cases was about 200 nm. In order to investigate hybrid's characteristics laser diffraction and liquid nitrogen adsorption methods were applied. Distinction in pore's specific volume of differently-obtained nanoparticles was found. Catalytic activity of all obtained materials were tested in conversion of N,N-diethylcarbomodithiolate to thiuram E. Effect of peripherally substituted phthalocyanines and morphology of matrixes were manifested on catalytic activity of the hybrids.

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## Keywords

cobalt complexes, heterogeneous catalysis, phthalocyanine, silica, sol-gel synthesis

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