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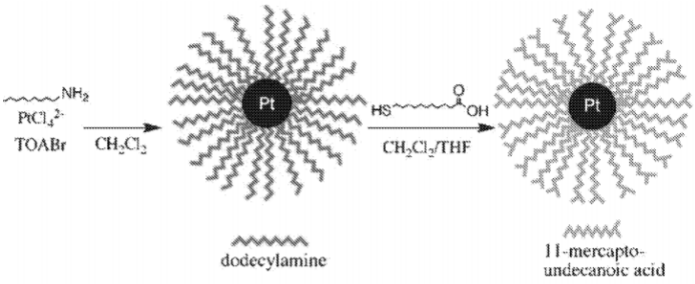
CORE-SHELL NAOPARTICULATE COMPOSITIONS AND METHODS

Embodiments of core-shell nanoparticles and methods of preparing the same



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Chemestry
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Brief description

The present invention relates to catalytic materials and core-shell nanoparticles, core-shell nanoparticles superposed on metal oxide support, and methods for making the same. Some embodiments of the invention provide for core-shell nanoparticulate compositions, each composition comprising late-transition-metal core encapsulated by metal oxide shell. Other embodiments of the invention provide for method of preparing core-shell nanoparticles.

Innovative aspects and main advantages

The present invention improves today's processes of emissions-control catalysts systems. The release of unburn methane during homogenous combustion is a serious problem. In heterogeneous catalysts methane oxidation must be very active at low reaction temperatures.

Applications

This invention may be deployed to enhance the performance of catalytic activity at low temperatures. It also limits deactivation mechanisms improving various catalytic processes, including hydrocarbon combustion processes.

Potential market

Power generation and heating applications are main industries of this invention.

Development status

Invention available to the market.