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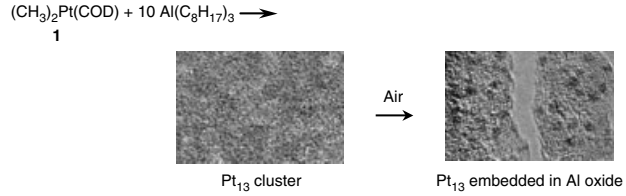
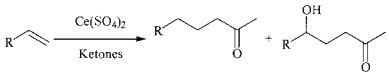
Section: Materials, Nanoscience and Catalysis

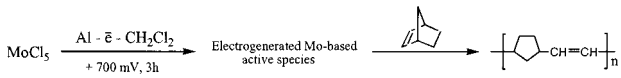
A Pt_{13} cluster (0.75 ± 0.10 nm) stabilized by an organoaluminium shell has been prepared for the first time. Slow oxidation transforms the organoaluminium shell into an aluminium oxide matrix in which Pt_{13} clusters are uniformly dispersed. The one-shell structure of the cluster was confirmed by X-ray absorption near-edge spectrum.



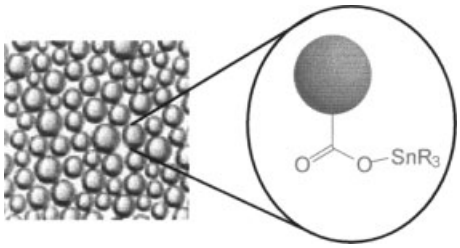
The reaction of olefins with cerium(IV) sulfate tetrahydrate in acetone–H_2O under reflux for 5 h gave 2-oxo- and 2-oxo-5-hydroxy derivatives.



An electrochemically generated molybdenum-based catalyst system is applied to the ring-opening metathesis polymerization of norbornene. The results are compared with those obtained using a tungsten-based catalyst system.



New catalytic systems derived from low-cost ion-exchange resins were prepared by functionalization of free carboxylic units with different triorganotin derivatives. The products obtained where characterized and tested in the transesterification reaction between ethyl acetate and primary, secondary and tertiary alcohols. The trialkyltin carboxylate anchored to the resin shows a promising activity that can be related to steric hindrance of the tin substituent, as well as to the alcoholic substrate.



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Section: Main Group Metal Compounds

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