

The Nano-Interface Between Material Science and Organometallic Chemistry

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The crossroad of organometallic chemistry with material science has recently allowed the rational development of catalysts that incorporate some of the basic elements found in homogeneous catalysts. This area of research has been coined as “surface organometallic” chemistry.

As a first step towards the research on hybrid organometallic/oxide systems, we study the interaction of organometallic precursors with oxide surfaces.

A $\text{Ru}_3(\text{CO})_{12}$ precursor was deposited on $\text{TiO}_2(110)$ surfaces by chemical vapor deposition (CVD).

Very reactive 1D RuO_x structures were formed on top of the TiO_2 substrate.

The Ru/TiO_2 system is more active for the photo-oxidation of ethanol to acetaldehyde than TiO_2

