

Investigation of Catalytic Materials by Cs-corrected Electron Microscopy

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High resolution transmission electron microscopy (HTREM) and a family of related analytical techniques grouped around it provide a very powerful way of studying catalyst materials down to nanometer and atomic scales. Information on the texture, morphology, phase composition, chemical composition and bonding state of the active sites of a catalyst can be obtained with these techniques. Recently, aberration-corrector is commercially available and Cs-corrected TEM has been used for characterizing the catalyst at atomic resolution. Examples on the investigation of metal-support interaction of supported catalysts, on the synergetic effects of bi-metallic system, on the imaging of isolated single atoms and small cluster will be illustrated in the presentation.