

Atomic-scale imaging of metal nanocluster catalysts in their working state

Stig Helveg

Haldor Topsøe A/S, Nymøllevej 55, DK-2800 Kgs. Lyngby, Denmark

Recent advances in high-resolution transmission electron microscopy (HRTEM) have opened up the possibility for imaging nanostructured catalysts during exposure to reactive gases at elevated temperatures. This capability provides unprecedented new insights into the atomic-scale structure and dynamics of the catalytic active nanostructures, even as they are functioning. In the present contribution, I outline recent work from our laboratory (1-4) that exploits *in situ* HRTEM to obtain atomic-scale information about surface structures and dynamics of supported metal nanocluster catalysts, and discuss possibilities of including such atomic-scale insight into the description of nanoclusters' catalytic properties.

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