In Situ X-Ray Absorption Studies on Metal Oxides

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Ammonium heptamolybdate (AHM, $(NH_4)_6Mo_7O_{24}*xH_2O$) is a common precursor for the production of partially reduced molybdenum trioxides (MoO_{3-x}). These oxides are model systems for much more complex mixed oxide ($Mo_x(V,W)_yO_3$) systems which find extensiv industrial use in the partial oxidation of light alkenes. The decomposition of AHM is know to proceed via a number of stages which afford products of different catalytic activity. Detailed structural studies are required to elucidate the short-range to long-range structure evolution of the oxide species.