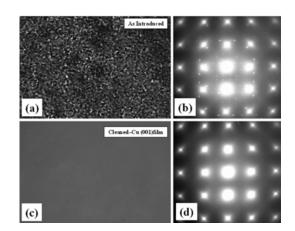
Methanol Oxidation Catalyzed by Copper-Based Materials Investigated by *In situ* UHV-TEM and STM

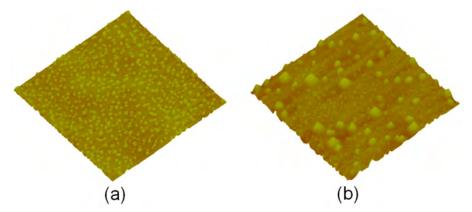
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$$CH_3OH + \frac{1}{2}O_2 \rightarrow 2H_2 + CO_2 \quad \left(\Delta H_{298}^0 = -191.9kJ/mol\right)$$





Cu and Cu oxides are prepared in situ to determine the effects of oxide nanostructures, surfaces, strain, defects and surface roughness on the oxidation of methanol reaction via dynamic nanostructural characterization methods (TEM and STM).