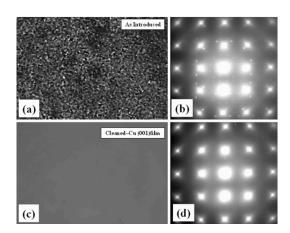
## Methanol Oxidation Catalyzed by Copper-Based Materials Investigated by *In situ* UHV-TEM and STM

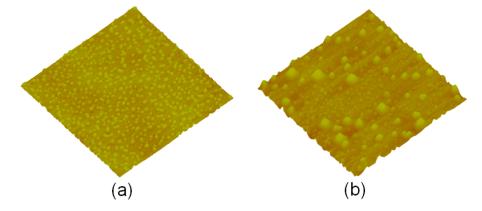
Judith Yang, University of Pittsburgh, PA

Guangwen Zhou, Binghamton University, NY

47608-AC10

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





We aim to prepare Cu and Cu oxides 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).