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" Prospects of Aberration-Corrected STEM for Catalysis "

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The aberration-corrected 300 kV scanning transmission electron microscope at ORNL now produces the world's smallest beam, 0.7 Å diameter, for the first time revealing individual atoms on real industrial supports. Such data is ideally complemented by first-principles theory which gives insight into atomic configurations and energetics. Two examples will be presented: 1) La adsorbed as single atoms stabilizes γ -alumina support, 2) the catalytic activity of nanogold rafts. Future prospects for single atom analysis and three-dimensional atomic-resolution tomography will be discussed.