We have synthesized TiO$_2$ nanoparticles with controlled morphologies to evaluate the influence of the support’s exposed facets on the reactivity of supported metal catalysts. In the Wulff construction of anatase TiO$_2$, there are two exposed surface facets, (101) and (001). The anatase (101) surface has lower energy. Particles with truncated bipyramid morphology with the majority of the anatase (101) surface are obtained when TiCl$_4$ is used as the precursor. However, fluoride ion reduces the energy of the (001) surface. Therefore, materials with nanoplatelets morphology with the majority of (001) exposed surface are obtained when TiF$_4$ is used as the precursor. It is known that anatase (001) is less acidic/more basic, has lower work function, and electrons avoid its surface. In photocatalysis, it is known that (001) surface prefers oxidation reactions while the anatase (101) surface prefers reduction reactions. However, the influence of the exposed facets of anatase TiO$_2$ on supported metal catalysis has not been studied. To evaluate the chemical reactivity intrinsic to the anatase (001) surface, fluoride ions and surfactants used in the synthesis must be removed. We have performed TEM, XPS, and FTIR characterizations to evaluate our nanoparticle ligand exchange procedures. Gold nanoparticles are deposited on the purified materials and Hammett studies of benzyl alcohol oxidation are being used to study the electronic interactions between the metal nanoparticles and the support.