

### Catalytic H<sub>2</sub> Oxidation on TiO<sub>2</sub>/Nanoporous Au; Towards Engineering TiO<sub>2</sub>/Au Interface

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Nanoporous gold (np-Au) is a novel three dimensional, bicontinuous and interconnected nanostructured monolithic material which serves as promising platform to design tailored catalysts via controlled surface modification through oxide deposition such as TiO<sub>2</sub> to assess catalytic activity for H<sub>2</sub> oxidation. In this work, we fabricated nanoporous Au films (~ 150 nm thick) of varying porosity and compositions by de-alloying Si from AuxSi1-x alloy. Inverse TiO<sub>2</sub>/np-Au catalysts were synthesized by oxide deposition on np-Au via titanium isopropoxide (TIP) impregnation. In order to evoke high catalytic activity from interface at TiO<sub>2</sub>/np-Au junction, concentration of TIP precursor is varied (using 0.1, 0.5 and 1 Wt. % TIP) in liquid phase deposition.