

Reactions on Model Catalysts: Oxide Surfaces

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In this seminar, I will summarize surface science studies addressing transition metal oxide surfaces that have been conducted at the iNANO center in Aarhus. Although we often start our studies with high-resolution scanning tunneling microscopy (STM), it is the combination of STM studies with various other techniques, such as X-ray photoelectron spectroscopy (XPS), and infrared reflection absorption spectroscopy (IRRAS), and density functional theory (DFT) calculations, which leads to a knowledge gain. Firstly, I will present examples found on the anatase $\text{TiO}_2(101)$ surface (a- TiO_2). The interaction with vanadium, the preparation of $\text{V}_2\text{O}_5/$ a- TiO_2 and $\text{WO}_3/$ a- TiO_2 model catalysts will be addressed, as well as the interaction of water with a- $\text{TiO}_2(101)$. If time permits, I will summarize our results addressing ultrathin FeO islands supported on Pt(111). After assigning of the islands edges at oxidizing and reducing conditions, I will discuss an *in-situ* STM experiment of the CO oxidation reaction.

Zoom link: <https://syddanskuni.zoom.us/j/65741874580>