Ive Hermans obtained a Ph.D. under the supervision of Profs. Pierre Jacobs and Jozef Peeters (2006; K.U.Leuven, Belgium). He also holds a postgraduate degree in Business Administration (K.U.Leuven, 2006). After post-doctoral research on in situ spectroscopy and reaction engineering with Prof. Alfons Baiker, he became assistant professor for heterogeneous catalysis (spring 2008) at ETH Zurich in Switzerland. On January 2014, Prof. Hermans moved to the University of Wisconsin-Madison, holding a dual appointment in the Department of Chemistry and the Department of Chemical and Biological Engineering. His group focuses on the mechanistic understanding of catalytic technology using a variety of techniques. In 2009 he received the ExxonMobil Chemical European Science and Engineering Award and in 2014 the Emerging Researcher Award by the ACS Division of Energy and Fuels.

“Science and Serendipity in Heterogeneous Catalysis Research”

In the first part of the presentation I will talk about our recent progress on the understanding of the two-dimensional dispersion of group V metal oxides on silica. Anchoring mechanisms, as well as practical ways to improve dispersion beyond the current state-of-the-art will be addressed. Oxidative dehydrogenation of propane (ODHP) is used as a structure-sensitive reaction, showing a linear increase in space-time-yield as a function of two-dimensional surface coverage. Breakthrough materials for ODHP, showing unprecedented selectivity, will be outlined.

In the second part of the talk I will summarize our quest for the nature of the active sites in Snβ using advanced ex and in situ characterization techniques.