

EPFL Valais/Wallis SEMINAR

30. 9. 2021, 11:00 - 12:00, EPFL Valais/Wallis in Sion, 4th floor, Zeuzier Room

Supported metal clusters with a precise number of atoms: stability, optical properties and chemical reactivity

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Small clusters containing only a handful atoms are a transition state between atomic and molecular properties to one side and solid state properties to the other. After discussing concepts of producing, selecting and depositing such small particles on a substrate, I will focus on the optical properties of the noble metal clusters as a function of size. The birth of the surface plasmon for very small cluster sizes is discussed as well as the fluorescence, readily present for metal particles in this size range. In the second part of this contribution I will focus on the chemical reactivity of titania supported transition metal clusters, here Pt_n . Cluster size effects, cluster substrate interaction and cluster stability under reaction conditions will be discussed.



CV: Dr. Wolfgang Harbich

Born in 1956 in Germany, Wolfgang Harbich graduated with a B.S. in Physics from the University of Bielefeld/Germany. He obtained his PhD degree in 1988. His doctoral thesis focused on "Alignment and Orientation in ion atom collisions". He then moved to the Institut of Experimental Physics at EPFL where he changed his focus to Cluster Physics, in particular to UV Visible optical absorption spectroscopy of matrix isolated coinage metal clusters and the morphology and chemical reactivity of model catalysts.