



FACULTY OF SCIENCE
Charles University

School of Chemistry, Faculty of Science,
Charles University invites for the lecture

Quo Vadis Chemie

Molecular Sensors and Magnetic Switches based on First-row Transition Metals

which will be delivered by



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on October 8, 2018 at 15:00

the Lecture Hall CH2 at the School of Chemistry, Faculty of Science, Hlavova 8

Abstract. The versatility of ethylenediamine-inspired Schiff-base transition metal complexes has been shown in their extensive applications in molecular sensors and molecular switches. Taking this into account, one can design an ethylenediamine-inspired versatile molecule with sensing or switching properties that will be used to fabricate materials with one or both properties combined. For example, while metal salen-type electropolymers of transition metal ions such as Co(II) and Ni(II) have produced exciting results in the activation of small molecules, particularly electrocatalytic reduction of oxygen, Fe(III)-salen derived complexes have shown to be able to switch between spin states, thus displaying the spin crossover phenomenon. Engineering of multifunctional materials with one function or more in the same molecule offers the opportunity to construct complex systems and to fabricate materials towards application to real life objects. Here I will show our contribution to the fields of molecular sensors and molecular switches where colorimetric sensors with molecular recognition using homo- and hetero-binuclear Cu(II) and Ni(II) complexes and Fe(III) magnetic switches will be discussed.