

# **Seminář odd. 26**

## **Tenkých vrstev a nanostruktur**

*Fyzikální ústav AVČR, Cukrovarnická 10, Praha 6*

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### **TÉMA**

## **Endohedral metallofullerenes: in cavea redox reactions and single molecule magnetism**

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Fullerenes encapsulating metal atoms in their interior are known as endohedral metallofullerenes (EMFs). Since the first discovery of EMFs in the gas phase in 1985 and development of their arc-discharge synthesis in early 1990s, the field of EMFs showed dramatic advancement. Carbon cage shields endohedral species from environment and thus stabilizes different types of metal clusters, which cannot exist by themselves. Exotic valence and spin states can be realized for such clusters. Furthermore, fullerenes can be “transparent” for electrons, and thus endohedral clusters can exhibit redox activity on their own and change their valence states in electron transfer reactions. Finally, lanthanide ions in EMFs have strong magnetic anisotropy, which leads to single molecule magnetism of EMFs.

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