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KATEDRA ANORGANICKÉ CHEMIE
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Quo Vadis Chemie

New Chiral Probes for Signalling and Sensing with Very Bright Lanthanide Complexes



Přednášející:

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Abstrakt: Lanthanide emissive probes respond selectively to ions or proteins in biological fluids or *in cellulo*, signalling the interaction by changes to the emission spectral profile, lifetime or the circular polarization of luminescence (CPL). The optical signalling is given by a ratio of emission band intensities or a red/green intensity ratio for Eu/Tb complexes. Examples will involve e.g. pH determination in lysosomes/endoplasmic reticulum, the determination of HCO_3^- in cellular mitochondria or rapid estimation of citrate and lactate in seminal fluid. The high brightness (up to $30 \text{ mM}^{-1}\text{cm}^{-1}$) allows low concentrations of the probe, aids rapid data acquisition and enables spectral imaging in microscopy, broadening the range of systems that can be addressed. CPL is the emission analogue of circular dichroism (CD), in which lanthanide complexes offer the best opportunities for chiroptical probe development as they act as pure spherical emitters. Very rarely, the observed CPL reports reversible changes of chirality by variation of the probe coordination sphere; examples presented will include strong induced CPL.

**Přednáška se bude konat 25. 11. 2013 (pondělí)
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kateder PŘF UK v Praze, Hlavova 2030, Praha 2.**