Study of chemical systems by means of luminescence spectrometry

Petr Táborský

Luminescence spectrometry is powerful analytical method of studying material that can be made to fluoresce, either in its natural form (native/intrinsic luminescence) or when treated with chemicals capable of fluorescing (extrinsic luminescence). The extrinsic luminescence is from analytical point of view usually divided into labels (covalent bond) and probes (non-covalent interaction). Optical properties of the probes are usually effected (solvent effect, quenching, energy transfer, etc.) by surrounding molecules and vice versa measured changes (luminescence intensity, emission maxima, life-time, quantum yield, etc.) can give information about the probe environment. The lecture will show two examples of luminescent probes: lanthanide(III) based probes and DNA probes derived from Quaternary benzo(c)phenanthridine alkaloids (QBAs).