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| <b>Name of the course</b>                 | <b>Principles and applications of fluorescence spectroscopy</b>   |
| Number of instruction hours               | 20  |
| Outline of course/module content          | <p>Primary processes in photophysics (absorption of electromagnetic radiation, electronic transitions, excited states, radiation and radiationless deactivation processes, Jablonski diagram, quantum yields).</p> <p>Principles and instrumentation of steady state and time resolved fluorescence spectroscopy.</p> <p>Experimental methods in photophysics (time resolved absorption spectroscopy, lifetimes).</p> <p>Influence of solvent polarity to the deactivation from the excited state, complexes in the excited state (excimers, exciplexes, electron transfer).</p> <p>Fluorescence quenching (theory and applications).</p> <p>Resonance energy transfer (theory and applications).</p> <p>Fluorescence polarization (theory and applications).</p> <p>Photochemical reactions of proton transfer.</p> <p>Application of fluorescence spectroscopy in biochemistry and biology.</p> <p>Fluorescent sensors.</p> |
| Description of instruction methods        | Lectures, seminars, tests and consultations.  |
| Description of course/module requirements | Written (seminar paper) and oral exam.  |