

Temperature-controlled flow-through cells for combined UV-Vis/SAXS measurements

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New flow-through cells for simultaneous UV-Vis/SAXS measurements of liquid samples are designed. For concentration or pH-dependent experiments, multiple sample solutions can be injected. A quick and precise temperature control of the sample in the range from 0 to 80 °C is foreseen. The cell will be compatible with an on-axis microscope, facilitating precise sample positioning and for observing bubble formation. SAXS can be measured through virtually scatterless windows. UV-Vis spectra can be collected along the flow channel. The pathlength of can be varied according to the absorption by the sample. The design aims at enabling reliable user-friendly measurements both in static and in continuous-flow mode, even for low scattering liquid samples. Millisecond time resolution can be realized fast readout of X ray and UV-Vis detectors. Faster dynamics can be investigated as a function of sample delay.

The combined spectroscopic and SAXS approach will be offered to users at the cSAXS beamline at the Swiss Light Source and shall be applied in investigations, for which only minute sample volumes are available, and for characterizing dynamical processes in biological and soft-matter systems.

Primary author: Mr HAN, Jun (Postdoc)

Co-author: MENZEL, Andreas (Paul Scherrer Institut)

Presenter: Mr HAN, Jun (Postdoc)

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