

The Small Quantum System Scientific Instrument at XFEL

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Investigations of atoms, ions, molecules and clusters in intense fields and non-linear phenomena in the soft X-ray regime (0.26 – 3.0 keV) are the center of interest for the SQS Scientific Instrument at the European XFEL. Full characterization of the (non-linear) photoionization process will be obtained by measuring the energy and angular distributions of electrons, ions and photons with various high-performance state-of-the-art spectrometers. For these experiments, the high-repetition rate available at the European XFEL will strongly favor the application of coincidence techniques allowing the simultaneous detection of the different reaction products. Finally, pump-probe experiments using a synchronized optical femtosecond laser or a split-and-delay unit for the XUV beam as well as time-resolved studies complete the general layout of this instrument.