Concomitant surface microscopy and spectroscopy in the lab enabled by plasma-driven XUV

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Photoemission can be exploited in the analysis of electronic structures of solids and dispersions in energy-momentum space. The photoemission can be triggered with XUV or X-rays radiation produced in large scale facilities like Synchrotron, having state-of-art specifications like wavelength tunability and high brightness (>10e19 ph.s-1mrad-2mm-20.1%BW). Unfortunately, the beam-time limitation restricts the possibility of measurement-optimization. An attractive possibility to overcome the restrictions presented above can be found in lab-scales sources based e.g. in plasmas-emission at XUV-wavelengths. In this case, linewidths of 10e-4 and high brightness (10e25 ph.s-1mrad-2mm-20.1%BW) can be obtained. Our table-top XUV-source is based on gas-discharge plasma-emissions and can provide XUV-photons (100 eV) at a pulse-rate of up to 100 Hz. Concomitant spectroscopy and imaging, with a Schwarzschild objective, permits morpho-chemical characterization of a solid sample.