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An ultra-high energy resolution and wide energy range soft X-ray beamline in SSRF Y.-B. SHI, Institute of Physics, Chinese Academy of Sciences, R. RUBEN, Advanced Photon Source, Argonne National Laboratory, L. XUE, Y. ZOU, Y. WANG, R.-Z. TAI, Shanghai Synchrotron Radiation Facility, Chinese Academy of Sciences, H. DING, Institute of Physics, Chinese Academy of Sciences — A new ultra-high energy resolution and wide energy range soft X-ray beamline is designed and is being constructed in Shanghai Synchrotron Radiation Facility (SSRF), which has two experimental stations: angle resolved photoemission spectroscopy (ARPES) and photoelectron emission microscopy (PEEM). The source is a pair of EPU's covering the energy ranges 20 to 200 eV and 200 to 2000 eV with arbitrary polarized light. The beamline, based on a plane grating monochromator (PGM) and four variable line spacing gratings, will deliver flux higher than 1.0×10^{12} photons/s/0.01%BW. A grating dedicated for high energies and very high resolution will provide more than 5×10^{10} photons/s at 1 keV with a resolution of 14 meV. The refocusing for both endstations is based on KB pairs with which the spot size will be $15 \times 4.7 \mu m^2$ (hor. \times ver. FWHM) at ARPES and $9.9 \times 4.8 \mu m^2$ (hor. \times ver. FWHM) at PEEM, respectively, with a 10 μm exit slit. Owing to high thermal radiation from the source, a new method is used to eliminate the influence of the thermal deformation on mirrors in order to achieve ultra-high energy resolution.

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