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A hard X-ray nanoprobe beamline at Shenzhen Innovation Lightsource Facility

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Hard X-ray nanoprobe is a key technology in the application of synchrotron radiation lightsource, especially for 4th generation lightsource. Here we report our new design of Hard X-ray nanoprobe beamline in Shenzhen Innovation Lightsource Facility (SILF). In this 150m long beamline, two-stage focusing method is adopted to offer great control over flux, coherence length and focused spot size. Two experimental stations with different focusing elements are designed to alternate ultimate spot size, flux and workspace. With the primary simulation, a spot size of a sub-30nm is acquired with zone plate focusing and $\sim 70\text{nm}$ with K-B mirror. Furthermore, the station with K-B mirror can also provide 60mm workspace and $\sim 1 \times 10^{11}$ photons/s flux.

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