The design of infrared beamline at SSRF

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The infrared (IR) beamline (BL01B) at the third generation Shanghai Synchrotron Radiation Facility (SSRF) will be opened to users at the end of 2013. The designed IR beamline project concerns two end stations at SSRF, one dedicated to time resolved IR spectroscopy, and another dedicated to IR microspectroscopy.

The optical schematic for IR beamline layout is shown at Fig. 1. The first optical component of the beamline is the plane mirror M1 with slot size of 2.6mm. It deflects the photon beam by 90° in the horizontal direction. The second flat mirror M2, directs the photon beam vertically, to a toroidal mirror T1. The beam will be directly outwards, and converges to CVD diamond window. The toroidal mirror T2 provides collimated beam and downwards turns the beam 90°. Two active feedback systems are installed after the toroidal mirror T2 to reduce the noise level of the beamline. Then the collimated IR light enters into the endstations (not shown in Fig. 1).

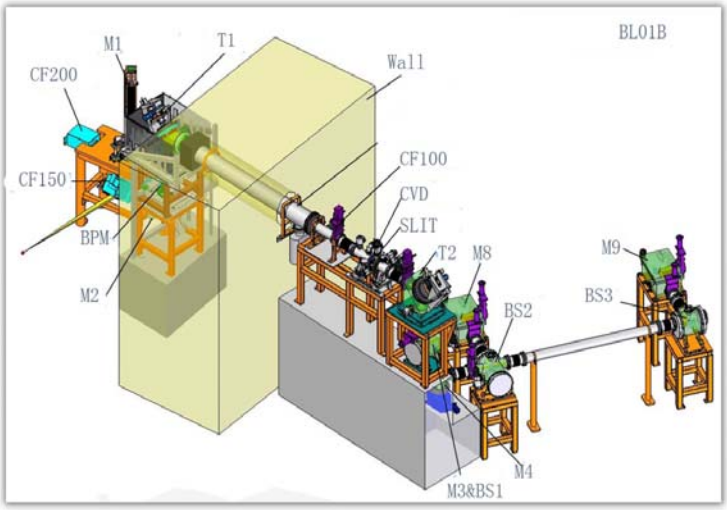

Fig. 1. The layout of IR beamline. (M: Flat Mirror; T: Toroidal mirror; BS: Beam splitter)