A two-frame X-pinch radiography system has been set up on the 1-MA Qiangguang-1 facility to investigate the wire core behaviors of the radiation suppressed cylindrical wire arrays (CWA) and planar wire arrays (PWA). The backlighting X-pinches were designed according to their estimated currents and the X-pinch current-scalings, data of which were collected from the X-pinch experiments on the Qiangguang-1 facility, a FLTD (Fast Linear Transformer Driver) stage here and other facilities reported around the world. This X-pinch radiography system gave a time resolution of ~ 2 ns, a spatial resolution less than 7 μm and a 10 mm × 3 mm field of view at the wire array. Backlighting experiments for the CWAs and PWAs were carried out and sample images were presented and analyzed. The two-wire backlighting X-pinches had a high failure rate and recording films were often exposed non-uniformly due to scattered radiations. At the same time, a tungsten step wedge has been fabricated recently for the areal mass-density calibration. Further experiments are planned to improve the X-pinch performances and obtain quantitative mass distributions of the wire cores.

* Work supported by National Natural Science Foundation of China under Grant 10905047