What's new of PES in SSRF

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An VUV beamline with minimum photon energy of 7 eV will be constructed in Shanghai Synchrotron Radiation Facility (SSRF) for photoelectron spectroscopy. The heat load problem is a fatal problem to generate low energy photons in such a 3.5 Gev ring. To resolve this problem, a knot undulator which can suppress the heat load for almost 100 times was proposed for electrical undulator [1, 2]. To decrease the energy consume, undulator with permanent magnets is more favorite. The APPLE-8 undulator has been proposed to overcome the heat load problem for undulator to generate polarized photons with permanent magnets. I will discuss the problem of APPLE-8 undulator and report the idea of revised knot undulator for permanent magnets. An APPLE-Knot structure is proposed and its perfect performance will be shown. Also, the design considerations of the related beamline and end station will be discussed.

[1] S. Qiao, Dewei Ma, Donglai Feng, S. Marks, R. Schlueter, S. Prestemon and Z. Hussain, Rev. Sci. Instrum. 80, 085108(2009).
[2] J. Yan and S. Qiao, Rev. Sci. Instrum. 81, 056101(2010).