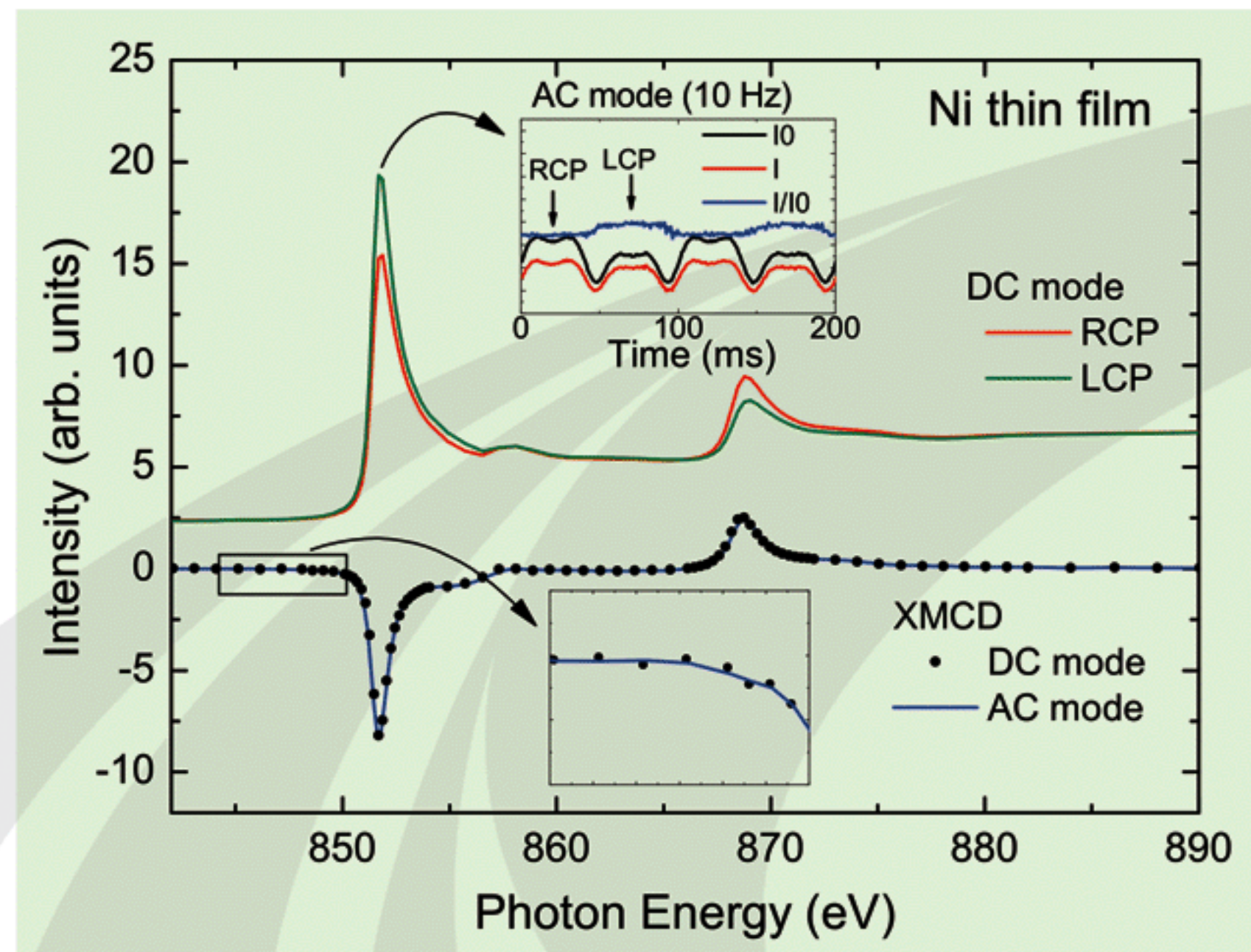


Merry Christmas and a Happy New Year! We are very happy to deliver you our second facility report of PF at this glorious season. In this report, we would like to report on the following two very recent topics.



The first is the progress of the PF BL16A beamline project [1], where a fast polarization switching technique in the soft X-ray region is being developed with a support from the Quantum Beam Technology Program of the Ministry of Education, Culture, Sports, Science and Technology (MEXT). Two tandem APPLE-II type undulators are set to left/right circular (or vertical/horizontal linear) polarizations, and the switching is realized by modulating the electron orbit through the undulators [2]. After the installation of the second undulator this summer, the commissioning is now underway and the

quality of X-ray magnetic circular dichroism (XMCD) data has been significantly improved. In the figure, Ni L-edge XMCD spectra taken in the DC and AC (10 Hz) modes are shown. This technique will be applied to a wide range of applications including precise studies on spin-electronics devices and the real-time observation of structural changes during surface chemical reactions.

[1] K. Amemiya *et al.*, *AIP Conf. Proc.* 1234 (2010) 295.

[2] T. Muro *et al.*, *J. Electron Spectrosc. Relat. Phenom.*, 144-147 (2005) 1101.



The second topics is the IMSS Symposium (Dec. 7-8) that has just finished successfully as this report goes to press. As you may already know, PF belongs to the Institute of Materials Structure Sciences (IMSS), which also provides other three useful quantum beams, namely, neutron, muon, and positron beams. This symposium has been held as the third of its series, this time with the main theme of "Prospects of Quantum Beam Sciences at IMSS." We had a special guest from MEXT, Mr. Takayuki Fujiyoshi, Director of Office for Quantum Radiation Research, and also invited leading scientists both domestic and overseas to

hear scientific and technological advances in materials structure sciences and discuss future perspectives of SR, neutron, muon and positron beams. Photograph (from left to right) : Edgar Weckert (DESY), Henry Chapman (CFEL), Osamu Shimomura (IMSS), Heintz Graafsma (DESY), Yuri Shvyd'ko (APS), and Soichi Wakatsuki (IMSS, Photon Factory).

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