MS096.O02

A spring-8 new beam line for the fuel cell analysis

Kiyotaka Asakura[1], Tomoya Uruga[2], Yasuhiro Iwasawa[3]
[1]*Hokkaido University, Sapporo, Japan,* [2]*SPring-8, Sayo-gun, Japan,* [3]*University of Electrocommunication, Tokyo, Japan*
E-mail: askr@cat.hokudai.ac.jp

BL36XU is a new beam line in SPring-8 dedicated to the fuel cell analysis using cutting-edge XAFS techniques[1,2]. A tapered undulator emits a highly brilliant X ray with the energy range of 4.5 keV -35 keV which enables us to carry out high time-resolution Quick XAFS (10 ms) , 2 D and 3D microXAFS. For the higher time-resolution XAFS measurement, Dispersive XAFS with 100 micro s time resolution is available. In addition the near ambient pressure (NAP)-XPS is installed in the same beam line and the electronic state of fuel cell catalysts is analyzed under the working conditions. The beam line has a high energy resolution monochromator for X-ray emission spectroscopy as well as bent crystal Laue analyser for highly sensitive fluorescence XAFS less than 1 ML. We discuss the possibility of the future XAFS spectroscopies.

[1] Sekizawa, O.; Uruga, T.; Tada, M.; Nitta, K.; Kato, K.; Tanida, H.; Takeshita, K.; Takahashi, S.; Sano, M.; Aoyagi, H.; Watanabe, A.; Nariyama, N.; Ohashi, H.; Yumoto, H.; Koyama, T.; Senba, Y.; Takeuchi, T.; Furukawa, Y.; Ohata, T.; Matsushita, T.; Ishizawa, Y.; Kudo, T.; Kimura, H.; Yamazaki, H.; Tanaka, T.; Bizen, T.; Seike, T.; Goto, S.; Ohno, H.; Takata, M.; Kitamura, H.; Ishikawa, T.; Yokoyama, T.; Iwasawa, Y. (2013) Journal of Physics: Conference Series , 430, 012020.
[2] Sekizawa, O.; Uruga, T.; Takagi, Y.; Nitta, K.; Kato, K.; Tanida, H.; Uesugi, K.; Hoshino, M.; Ikenaga, E.; Takeshita, K.; Takahashi, S.; Sano, M.; Aoyagi, H.; Watanabe, A.; Nariyama, N.; Ohashi, H.; Yumoto, H.; Koyama, T.; Senba, Y.; Takeuchi, T.; Furukawa, Y.; Ohata, T.; Matsushita, T.; Ishizawa, Y.; Kudo, T.; Kimura, H.; Yamazaki, H.; Tanaka, T.; Bizen, T.; Seike, T.; Goto, S.; Ohno, H.; Takata, M.; Kitamura, H.; Ishikawa, T.; Tada, M.; Yokoyama, T.; Iwasawa, Y.（2016）Journal of Physics: Conference Series , 712, 012142.

Keywords: Advanced XAFS, NAP-XPS, fuel cell