Recent APXPS development in Shanghai

Zhi LIU[1, 2, 3]

1. Center for Transformative Science, ShanghaiTech University
2. School of Physical Science and Technology, ShanghaiTech University
3. SHINE Project, ShanghaiTech University

* E-mail: liuzhi@shanghaitech.edu.cn

Abstract：

Studying electrochemical reactions at interfaces between different states of matter has been a long-term interest for both experimentalists and theorists in wide-range research areas. Revealing the fundamental properties at such interfaces is critical for a complete description of relevant electrochemical processes and for future designs of advance materials. In this talk, we will present a brief review on our in situ investigations at interfaces, including gas/solid interface and liquid/solid interface[1]. These examples highlight the importance of studying “living” interfaces in a dynamic environment and the value of correlative in situ methods. We will discuss our beamline at Shanghai Synchrotron Radiation and In-situ Electron Microscopy Facility, which allows in situ studies at pressures up to 20 mbar with high spatial resolution. We will also share recent progress on our lab-based system dedicated for in situ investigations of liquid/solid interfaces. Other new experimental methods will be briefly discussed as well.

References:

[1] Han, Y.; Zhang, H.; Yu, Y.; Liu, Z., ACS Catal. 2021, 11, 1464.

Prof. Zhi Liu received his BSc in Geophysics/Physics from Peking University, and MSc in Electrical Engineering as well as a PhD in Physics from Stanford University. Before joining the Lawrence Berkeley National Lab as a staff scientist, he was a research associate at Stanford University/Stanford Synchrotron Radiation Laboratory. Liu is currently the director of Center for Transformative Science and vice provost of ShanghaiTech University. Prof. Liu’s research interest is surface and interface science. Particularly, phenomena at gas-solid interface and liquid-solid interface, and synchrotron/FEL based in-situ characterization techniques and advanced instrumentation development. Liu has published over 300 papers in peer reviewed academic journals. Currently, He is also leading the beamline and endstation construction for X-ray Free Electron Laser projects in China (SXFEL and SHINE).