



第二十四屆用戶年會暨研討會
Users' Meeting & Workshops

Invitation

National Synchrotron Radiation Research Center (NSRRC) and User Executive Committee (UEC) sincerely invite you to participate in the 24th Users' Meeting & Workshops on September 11 - 13, 2018 to share your recent research results.

The meeting on September 11 will begin with sessions covering the status reports and future plans regarding NSRRC's light sources & beamlines, and neutron facility status. Following the sessions above is the Users' Town Meeting, hosted by the UEC Chair and NSRRC Director. Users can communicate with the Director and discuss issues related to the experiments, user service and NSRRC future development during the Users' Town Meeting. In the afternoon, several distinguished users from different fields will present their cutting-edge research. Student poster/oral presentation sessions, classified into different groups based on research fields, will come about after distinguished users' talks. The selected best poster of each contest group will be presented with the "Glory of Taiwan" award in the Award Ceremony at dinner banquet. Six interest group meetings will take place following the serial above-mentioned presentations.

Workshop I & II will be held on September 12 (Wed.), while Workshop III and IV on September 13 (Thu.). The contents of four workshops are listed as follows:

Workshop I: Applications of Modern Spectroscopic Methods of Inorganic Chemistry to Biology and Chemistry using Synchrotron Radiation

Modern inorganic chemistry spectroscopic methods using synchrotron radiation can be exploited to probe the nature of the metal environments in a variety of applications including the study of the coordination core structures in metal-based medical therapeutics and homogeneous/heterogeneous catalysts; the metal active sites of biological macromolecules including metal-nucleic acid complexes and metalloproteins such as oxygen evolving complex (OEC) in photosynthesis II (PS II); and the molecular speciation of metal complexes and elements in plant and environmental sciences. The methods to be discussed in this Workshop will include the X-ray absorption near edge fine structure (XANES) and extended X-ray absorption fine structure (EXAFS) of X-ray absorption spectroscopy; X-ray emission spectroscopy; Mössbauer spectroscopy; X-ray magnetic circular dichroism (XMCD); nuclear resonance vibrational spectroscopy (NRVS); and the X-ray free electron laser. Two new platforms, quick EXAFS (QEXAFS) and microbeam X-ray fluorescence microscopy (μ XFM), are under construction and will be added to our new beamline station at the Taiwan Photo Source (TPS). Upon completion and release to NSRRC users, the new high flux and extreme short time resolution of the QEXAFS will allow researchers to follow the intrinsic properties around the metals to be explored in real time in various inorganic chemical reactions including their catalytic conversions in biological processes. In addition, μ XFM will provide the high resolution images of a variety of transition metals and elements in biological samples for applications in biomedical diagnostics, mineral nutrition distribution in the soil, metal trafficking and homeostasis in plant sciences, geochemistry study and environmental sciences, in addition to the development of advanced functional materials.



Workshop II: VUV Experiments in Molecular and Aerosol Sciences

Synchrotron radiation generated vacuum-ultraviolet (VUV) provides the highest photon flux and the broad tunable range of photon energies. VUV radiation is the most suitable energy regime to probe the chemical characteristics of materials of interest, and can be used to study the photoionization and photodissociation processes. This workshop invites international and native scientists to share the latest advances in applying VUV to study the molecular and aerosol sciences, along with their implications in the interstellar chemistry, atmospheric chemistry and environmental chemistry. The applications of VUV radiation to interrogate the chemical kinetics of gaseous molecules, to study the chemical reactions of molecules by mimicking the interstellar environments using the matrix-isolation approaches, and to probe the valence electronic structures of aerosols using the aerosol VUV photoelectron spectroscopy will be addressed. The future perspective of VUV science will also be discussed.

Workshop III: Full-Field Hard X-ray Microscopy and Its Applications

High-energy high-resolution X-ray 3D computed tomography has been an indispensable tool in biomedical and material sciences. In recent years, the application fields of X-ray 3D computed tomographic techniques have greatly extended due to in combination with diffraction or absorption spectroscopic technologies. In this conference, we invited domestic and foreign experts to participate and share their experiences in the development of high-resolution X-ray 3D computed tomographic system and its applications on various fields, such as software and hardware developments, and applications on biomedical, material, paleontological, geological, and energy sciences. The discussion of conference issues will be referred for the design and application of the TPS-31A Projection/Transmission X-ray Microscopy beamline at Taiwan Photon Source in the near future.

Workshop IV : Complementary Applications of X-rays and Neutrons

Neutron scattering technology has developed rapidly in various fields. It is complementary with X-ray technology and also a powerful tool for the development of innovative industries. In this workshop, we invited instrument scientists from our center and Australian Nuclear and Science and Technology Organization (ANSTO) to introduce the operation of the neutron facility and the principle of the neutron scattering instrument in different fields and its Applications. We also invite experienced users to share their neutron research results and neutron experience sharing. At the end of the meeting, all the participants will be invited to face-to-face dialogue and brainstorm together. We hope this will allow neutron scattering technology to more effectively support domestic users and enhance Taiwan's international competitiveness in this field.

We cordially invite you to participate in the 24th Users' Meeting & Workshops and Poster Session. Please register online and submit your one-page abstract at <http://regis.nsrcc.org.tw/Default.aspx?lang=enUS> by July 20 (Fri.). For updates on the 24th Users' Meeting & Workshops, please visit our website at <http://regis.nsrcc.org.tw/Default.aspx?lang=enUS>.

Looking forward to seeing all of you at the meeting!



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June 20, 2018