ANSTO User Meeting 2021

Wednesday, 24 November 2021 - Friday, 26 November 2021

Online

Scientific Programme

Advanced Materials

This topic invites talks and posters related to the application of the neutron, ion beam, synchrotron radiation or other related complimentary techniques used for characterisation, modification and analysis of advanced materials; including but not limited to electronic, ionic conductive, semiconductive, superconductive, spintronic, magnetic, ferroelectric, piezoelectric, thermoelectric, photovoltaic and photocatalytic functional materials, 2D materials, nanomaterials and biomaterials.

Biomedicine, Life science & Food Science

This topic covers the application of neutron scattering, synchrotron radiation, ion beam, or any other complementary techniques to all areas of life science, biomedicine, and food science. The theme welcomes talks and posters, which involve the advancement of knowledge in these fields, as well as, the work relating to discuss novel experimental design and data analysis, tailoring to the relevant complex systems.

Physics, Surface & Condensed Matter

The physics theme will cover all areas of condensed matter and surface physics. This includes, but is not restricted to the investigation of systems using X-rays, neutrons and ion beams as well as complementary theoretical work. The theme is open to all topics including magnetism, superconductivity, electronic structure, surfaces and thin films.

Chemistry, Soft Matter & Crystallography

This topic covers the application of the neutron, ion beam, synchrotron radiation, and any other relevant techniques to multiple disciplines; polymer, peptides and proteins, novel metal complex, nanoparticles, liquid crystals, etc. The theme welcomes talks and posters contributes to the advancement of knowledge in the fields with different perspectives, e.g., establishing new crystallographic methods or applying traditional technique to understand the properties of new materials, understanding the structure-activity relationships, discovering novel structures and dynamics.

Manufacturing & Engineering

This session covers the use of all forms of synchrotron X-ray and neutron scattering as applied to engineering, manufacturing and industry. Techniques include (but are not limited to); residual stress measurement, imaging (radiography and tomography), powder diffraction and texture analysis as applied to welding, additive and conventional manufacturing, surface coatings, concrete, geotechnical engineering, civil structures, engineering materials, etc.

Earth, Environment & Cultural Heritage

The Earth, Environment and Cultural Heritage session invites abstracts featuring recent ANSTO and Australian Synchrotron research toward these broad fields, where science may be directed

toward (although not limited to): atmospheric and meteorological processes, climate change, environmental change, resource sustainability, geological analyses including tectonics and volcanology, landscape evolution, ocean and marine systems, forensic analysis, archaeology, art provenance.

Instruments & Techniques

This topic stream invites submission of talks and posters that present advanced methods of physical measurement; including the development of novel instrumentation or utilisation of novel techniques that improve research measurement capabilities across any field of science - physics, chemistry, biology, ecology, geology, etc. The focus of presentations in this stream may include, but are not limited to; the principles of new physical instrument operation, new development (hardware or software) on current instruments that produce improved design or measurement capabilities, novel application of measurement instruments or techniques in scientific fields where they are not routinely utilised.

Poster

Plenary