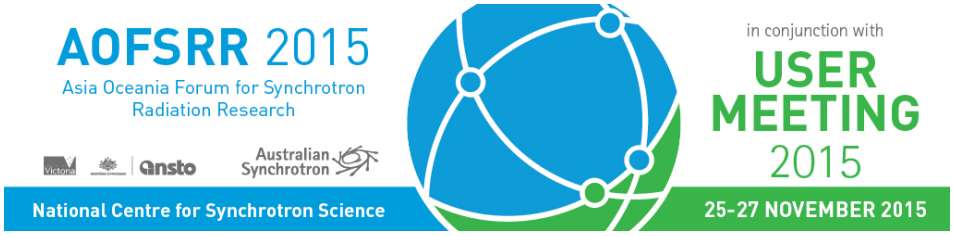

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X-ray Spectroscopic Advances in Condensed Matter Interactions with X-rays

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Exciting fundamental problems and advanced applications have emerged in X-ray Spectroscopy. Accuracy of absorption coefficients to 0.02% have led to insights into atomic form factors[1], XAFS dynamical bonding[2], electron inelastic mean free paths[3] and nanoroughness[4], with technological offshoots into detector and synchrotron diagnostics. As a consequence, the accurate characterization of fluorescence spectroscopy is developing, together with the accurate investigation of organometallic complexes. Burgeoning applications in RIXS and ultrafast techniques have led to insight into chemical intermediates. Advances are beginning to be able to investigate polarization, alignment, nanostructures, and dynamic and static disorder.
[1] MD de Jonge, CQ Tran, CT Chantler, Z Barnea et al, Measurement of the x-ray mass attenuation coefficient and determination of the imaginary component of the atomic form-factor of tin over the energy range of 29 keV – 60 keV, Phys. Rev. A75 (2007) 032702
[2] JL Glover, CT Chantler, Z Barnea, NA Rae, CQ Tran, Measurement of the X-ray mass-attenuation coefficients of gold, derived quantities between 14 keV and 21 keV and determination of the bond lengths of gold, J. Phys. B 43 (2010) 085001
[3] CT Chantler, JD Bourke, X-ray Spectroscopic Measurement of the Photoelectron Inelastic Mean Free Paths in Molybdenum, Journal of Physical Chemistry Letters 1 (2010) 2422; JD Bourke and CT Chantler, Phys. Rev. Lett. 104, 206601 (2010)
[4] JL Glover, CT Chantler, MD de Jonge, Nano-roughness in gold revealed from X-ray signature, Phys. Lett. A373 (2009) 1177

Keywords

XAS XERT accuracy dynamical bondlengths thermal parameters IMFP nano-roughness

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