XPCS from Metal Surfaces and Interfaces

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X-ray Photon Correlation Spectroscopy (XPCS) can be used to measure both equilibrium and non-equilibrium q-dependent dynamics, at an atomic scale, from surfaces and interfaces. Recently such work has been extended to high-Z metals in vacuum as well as model electro-chemical and gas-phase environments. Such measurements have re-vealed information about temperature and potential dependent behav-ior of surface reconstructions, and atomic terraces and islands. How-ever, to this point complete extension of the technique has been lim-ited due to coherent flux as well as x-ray energy. In particular there are many open questions for lower Z elements in real-world conditions. Higher energy coherent flux should provide several opportunities for this technique to be extended and find significantly wider application for the study of surface phenomena.