

SEMINARIUM RENTGENOWSKIE

Dnia 21.01.2014r. o godz. 10.30, w Sali D Instytutu Fizyki PAN, odbędzie się seminarium rtg. na którym dr Andrew Aquila z European XFEL, wygłosi referat na temat:

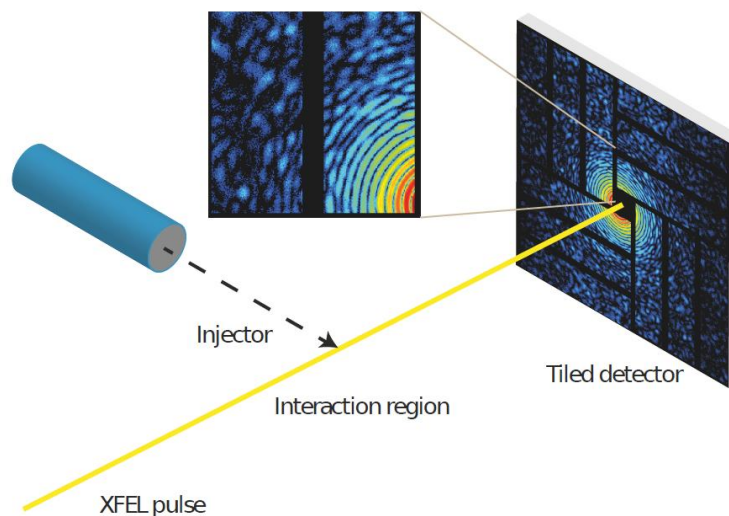
"Bio-imaging at the European XFEL"

Abstract:

Since first light, four years ago, the Linac Coherent Light Source (LCLS) has demonstrated the scientific potential of hard X-ray free electron laser pulses. The applications for biological structure determination are vast and promising with molecular movies, the use of nano-crystals in protein crystallography, and high resolution images of sub-micron objects down to single protein complexes. The European X-ray Free Electron Lasers (XFEL) project is being designed to address these and other scientific goals.

Biological samples to be examined at the European XFEL fall into several categories, more specifically those of a non-crystalline and those of a crystalline nature. The former type of sample varies in size from potentially single biological macromolecules up to viruses and small cells. The latter group of samples is mainly made up by protein nano-crystals which cannot be grown to a larger size and thus require very intense photon fields to be studied.

This talk will discuss advances in biophysical X-ray imaging with emphasis on the latest developments and instrumentation for the European XFEL, specifically focusing on the Single Particles, Clusters and Biomolecules (SPB) instrument. Instrument development including the optical layout, key diagnostics, sample environment and detection systems will be described. Experimental techniques include various forms of coherent diffractive imaging and crystallographic analysis applied to collections of many thousands of nano-crystals will also be discussed.



dr hab. Sławomir Kret