

„Never waste a good crises“¹- how the rise of Cryo-EM and the cumulative synchrotron dark times can lead to quality of life improvements for industrial MX-users

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Abstract

During the last years major transitions have occurred in protein crystallography. In academics, Cryo-EM is broadly used and will be the first method of choice for de novo structures and will replace crystallography as the dominant method in the near future. In industry, on the other side, the number of samples has been increased constantly and more and more complex targets are used for structure guided drug design.

Both trends combined together will cause a proportional increase of demand for synchrotron beam time by industrial users compared to their academic colleagues.

In parallel, all major synchrotrons have already been upgraded or will soon be upgraded. The dark times caused by these upgrades are a unique opportunity to not only rethink the current beamline designs but to also prepare for the upcoming challenge of combining the requirement for high throughput with the capability of handling difficult samples.

Upon his routine experience, the author will present actual and probable bottlenecks during the work with challenging industrial projects and will try to make suggestions to achieve the balancing act of measuring difficult industrial samples efficiently.

In addition a successful example of a beam line development for very complicated samples which was refined for increased productivity will be shown.

References:

- 1) quotation of Winston Churchill