

Recent Advances in Grid Technology

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Optimised, consistent sample preparation remains a key roadblock for high-throughput efficient structure determination by cryoEM. SPT Labtech and Quantifoil offer market-leading solutions to address these issues and enable high quality, optimised vitrification. Quantifoil have built their reputation offering the latest developments in sample supports, including UltrAuFoil gold on gold grids that deliver better reconstructions. Our new HexAuFoil ultra-small hole gold sample supports deliver consistent, thin ice across every grid and can virtually eliminate beam-induced motion, allowing the extrapolation of structure factors to pre-exposure values, delivering better images every time. In this talk we will discuss how the design of the HexAuFoil grid delivers these results, and offer a guide to how to get the best from these revolutionary new supports. In contrast, SPT Labtech utilised their expertise in structural biology automation to develop the chameleon automated sample preparation instrument. We will discuss how chameleon delivers optimized grid vitrification with blotless technology and high speed plunging. The new QUANTIFOIL Active self-wicking grids for use exclusively with chameleon offer an expanded range of grid geometries, including a multi-hole grid for screening. The workshop will demonstrate how together, Quantifoil and SPT Labtech offer the ability to refine sample preparation conditions for each project, opening up the potential for improved results.