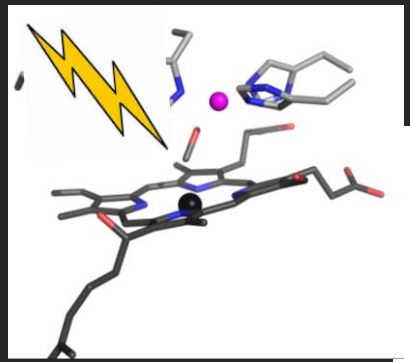
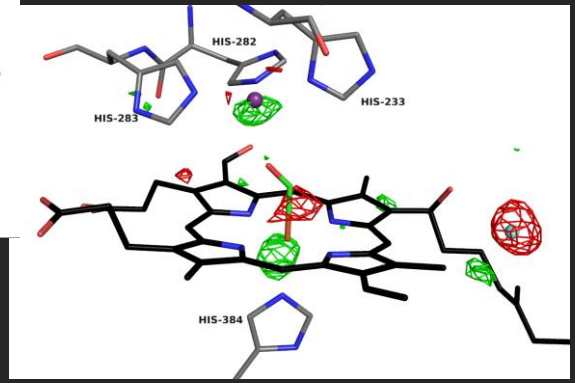
Future time-resolved serial crystallography at MAX IV

Challenge – reaction triggering within crystals

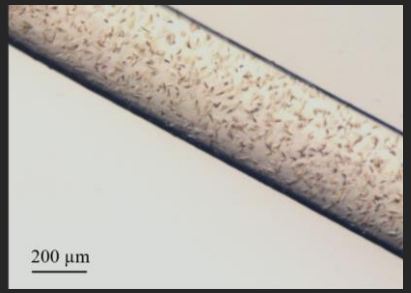
- light activation
- mixing devises
- caged compounds
- temperature jumps *etc.*



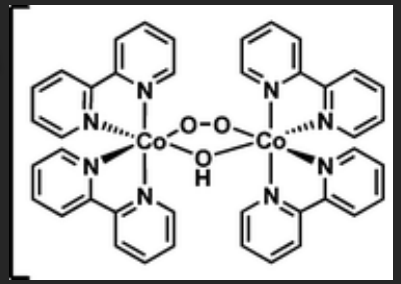
cytochrome *c* oxidase active site



positive / negative F_oF_o map upon photolysis of CO from active site



lcp crystals of cytochrome *c* oxidase

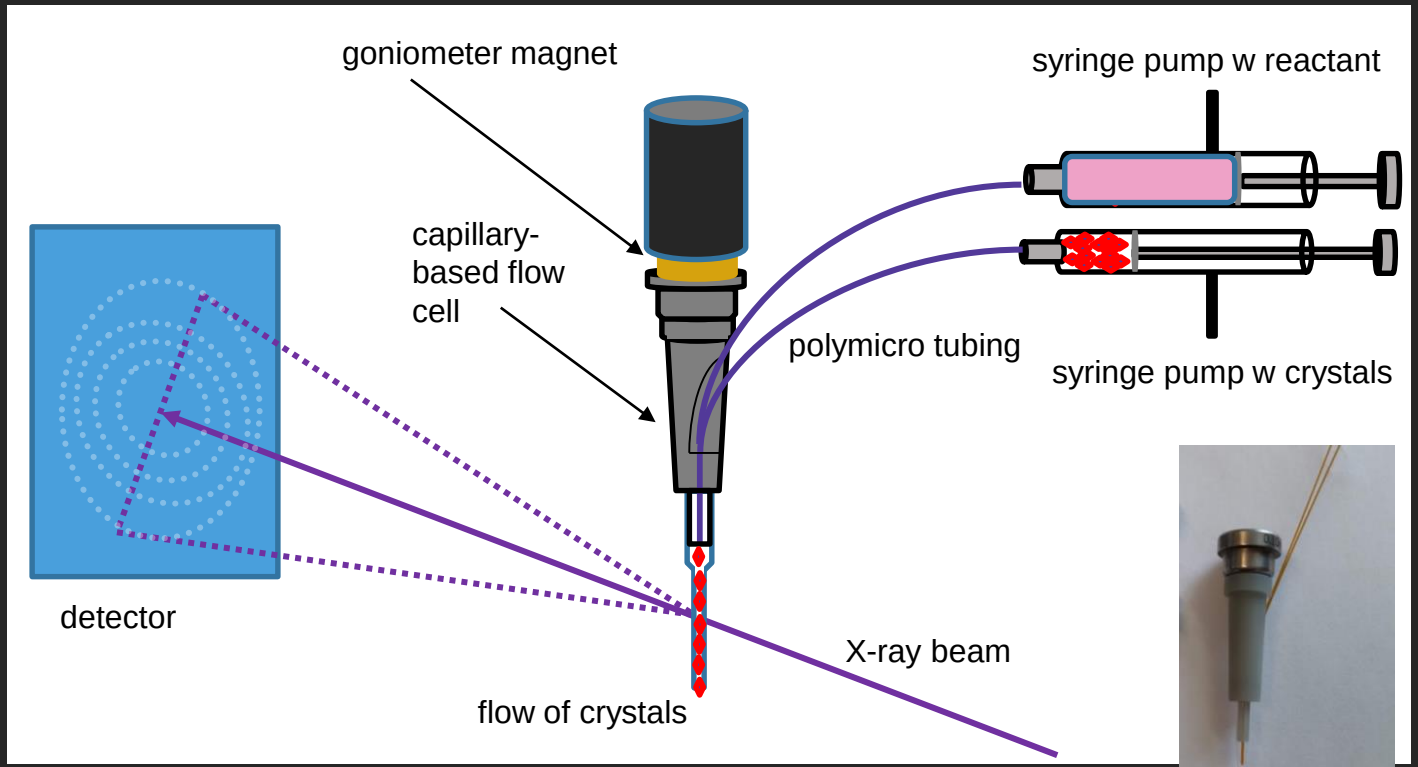


caged oxygen

Future time-resolved serial crystallography at MAX IV

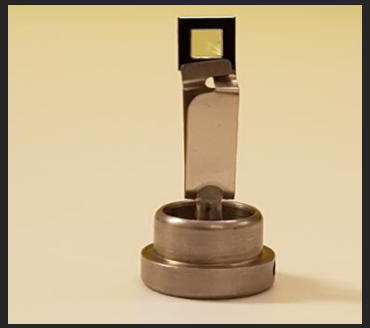
Serial-X: development of in-house injection devices - capillary based flow cells

crystal stream



Serial crystallography in drug discovery

Shilova et al. J Synch Rad 27 (2020)



microcrystals of soluble epoxide hydrolase on a silicon nitride fixed-target membrane

Future:

- X-ray screening of pharmaceutical compounds using on-chip crystallization and on-chip ligand binding
- cryo and room temperature

→ *higher automation*

Current limitation:

- data processing pipeline/on-line processing for serial crystallography data is lacking