

## Microsymposium

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### *Development of Single Molecule Imaging Using XFELs: Recent Results and Prospects*

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X-ray Free Electron Lasers such as the Linac Coherent Light Source (LCLS) were built on the promise of single molecule imaging. The extremely intense pulses of x-rays such sources can deliver can in principle provide at the same time the large number of photons required to produce sufficient signal from a single molecule while keeping the pulse duration short enough to prevent radiation damage from destroying the sample before the measurement is complete. This diffract-then-destroy concept allows the measurement to occur rapidly, before the sample is completely damaged after the x-rays have interacted with the sample. After close to 5 years of operation of the first hard x-ray free electron laser in the world, the LCLS, some data exists which makes it possible to review past experiments and technical developments aimed at the single particle imaging. Furthermore, one can discuss the still required technical, computational and theoretical developments to make this a reality. Recent results and future prospects of the technique will be presented in this talk.

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