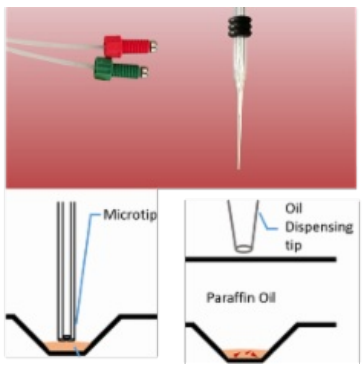
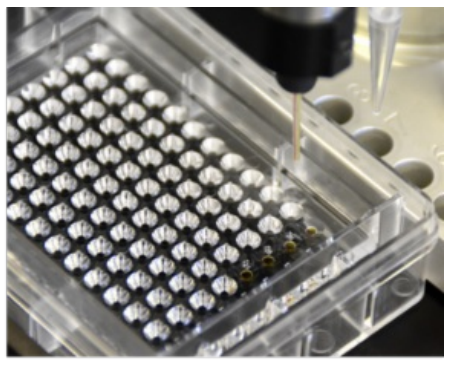




Focus on microbatch-under-oil

Dear Crystallographer

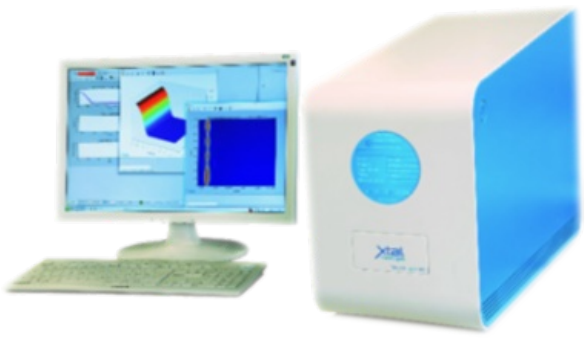
The microbatch technique uses small drops (140 nL to 8 µL) that are sealed with oil. The method was originally developed for protein crystallization but now an important application is emerging for small volume dynamic light scattering (DLS).

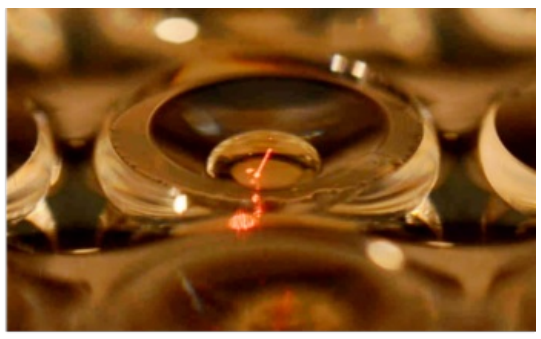
Using microbatch for crystallization

- Finds hits that vapor diffusion does not find
- Some crystals grown under oil diffract better
- Fewer problems with skins on drops
- Suitable for growing crystals for XFEL data collection and neutron diffraction.
- Excellent imaging of crystals

The Oryx range of crystallization robots can dispense screening, microseeding and optimization experiments using the microbatch method.

SpectroLight 600 DLS





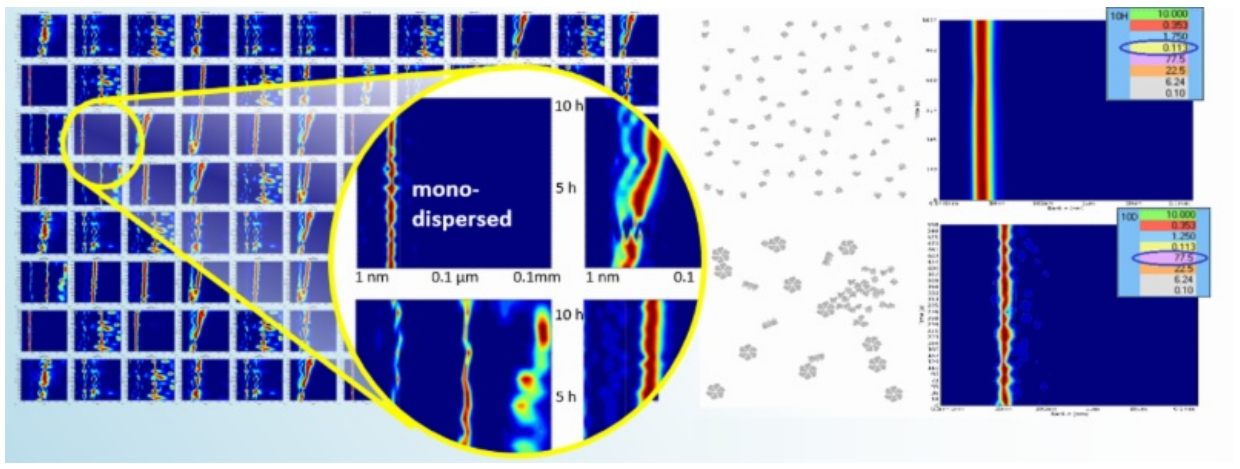
Using microbatch for DLS

- Best setup for very small volume DLS
- There are fewer reflections at the surface of the drop (because of refractive index matching)
- The setup is compatible with the SpectroLight 600 by XtalConcepts.
- 96 drops can be scanned in a single run
- 7.0 µL of sample is sufficient for 96 wells

Single-particle cryoEM clearly has great potential to determine the structures of macromolecules when crystallographic approaches are not available. However the throughput of cryoEM is low, with only one or a few samples being analysed per day. This creates a need for a pre-screening approach that can investigate the behaviour of macromolecules in solution. Douglas Instruments has worked closely with XtalConcepts to develop a screening protocol where e.g. 96 wells can be analyzed by DLS using only a few microlitres of sample.

Falke, S. et al. Journal of synchrotron radiation, 25(2) (link to PDF).
https://www.douglas.co.uk/cryoem.htm

96 well DLS screen results. Particle radius vs time.



Douglas Instruments Privacy Policy

For more information about our privacy policy which includes updated information relating to the GDPR, click here.

To request a quotation or demonstration please contact **carolyn@douglas.co.uk**

For product support contact **stefan@douglas.co.uk**

For anything else please contact **info@douglas.co.uk**

Douglas Instruments will be at the following meetings:

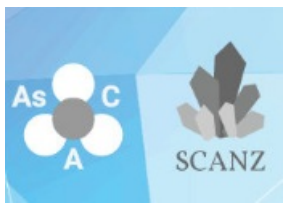
Visit our booth and pick up a microseeding toolkit containing everything you need to do a rMMS microseeding experiment including a Hampton Research Seed Bead and Crystal Crusher.

SMCr, Oaxaca, Mexico

20 October - 25 October 2018

ICCBM-17, Shanghai, China

27 October - 2 November 2018



AsCA 2018 Crystal 32, Auckland, NZ

2 December - 5 December 2018

Recent citations of Douglas Instruments products

The crystal structure of monoacylglycerol lipase from M. tuberculosis reveals the basis for specific inhibition

Aschauer, P., Zimmermann, R., Breinbauer, R., Pavkov-Keller, T. and Oberer, M., 2018.

Scientific reports, 8(1), p.8948

Structure of a cleavage-independent HIV Env recapitulates the glycoprotein architecture of the native cleaved trimer

Sarkar, A., Bale, S., Behrens, A.J., Kumar, S., Sharma, S.K., de Val, N., Pallesen, J., Irimia, A., Diwanji, D.C., Stanfield, R.L. and Ward, A.B., 2018.

Nature communications, 9(1), p.1956.

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Success in protein crystallization