

Phase contrast holography (Holloid)



Technology

Online phase contrast holography is based on recording of defocused images. Utilizing machine learning, numerical backpropagation generates a stack of pictures. This information is used to simulate different contrast methods which enables particle/cells/bacteria etc. characterization and distinction.

Vendors

- Holloid

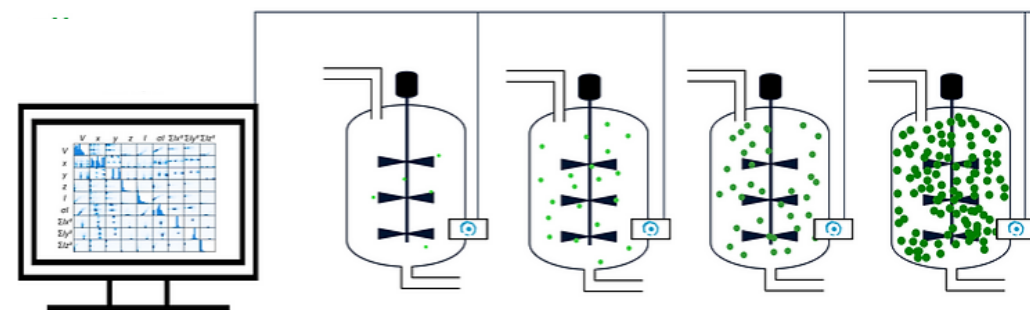
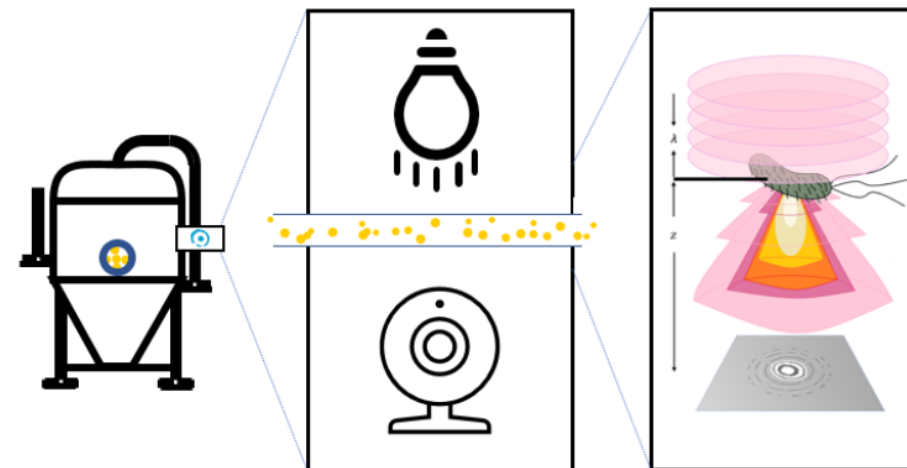


Status

- Holloid has developed a prototype that can be used to measure viable and total cell density (two CPPs) simultaneously online and in realtime.

Co-development

- In addition to determine CPPs we want to use Holloids technology to co-develop an application to measure Bioburden (a CQA) including bacteria, yeast, mycoplasma etc. in bioreactors. Early detection of contamination is critical especially for continuous manufacturing.



Source: <https://www.holloid.com/>

QCL-IR sensor development - Christian Doppler (CD)



Technology

The biggest caveat of using IR for Biologics PAT was its lack of sensitivity. The development of quantum cascade lasers (QCL) are a paradigm shift in laser design and enhance sensitivity by one order of magnitude. Further development of 1st generation QCL-IR technology aims to assess CQAs such as concentration and higher order structure in downstream monitoring

Vendors

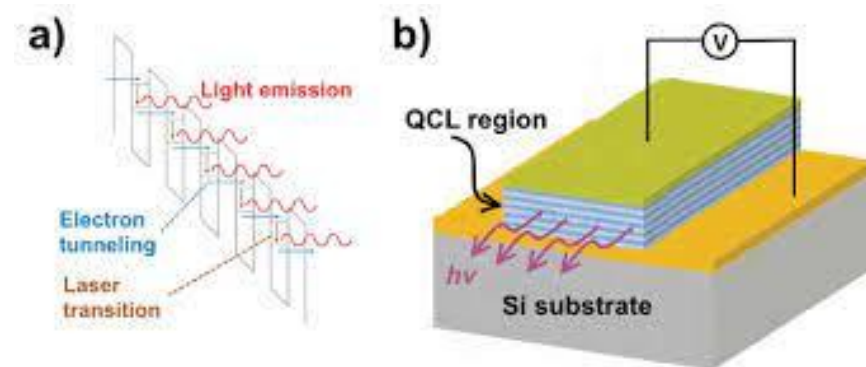
- Repligen - Culpeo

Status

- Christian Doppler Lab started operation in October 2024

Experience

- We recently installed Culpeo QCL-IR in our Äkta-PAT method development suite. Close collaboration with CD Lab to develop PAT solutions for downstream processing



Source: https://www.photonics.com/Buyers_Guide/Products/Spectrometers/Culpeo_QCL-IR_Liquid_Analyzer/psp3766

Ganymede AI Chromatography

Technology

Ganymede's "lab-as-code" approach provides a circular workflow that automates data movement between instruments and laboratory systems. They are able to use AI and machine learning to automate the analysis of chromatography data, which traditionally involves repetitive and manual data processing tasks. This includes steps like peak identification, baseline correction, and integration of chromatographic data.

Vendors

- Ganymede

Status

- Ganymede's AI for Chromatography software is in a late-stage development and pilot-testing phase.

Experience

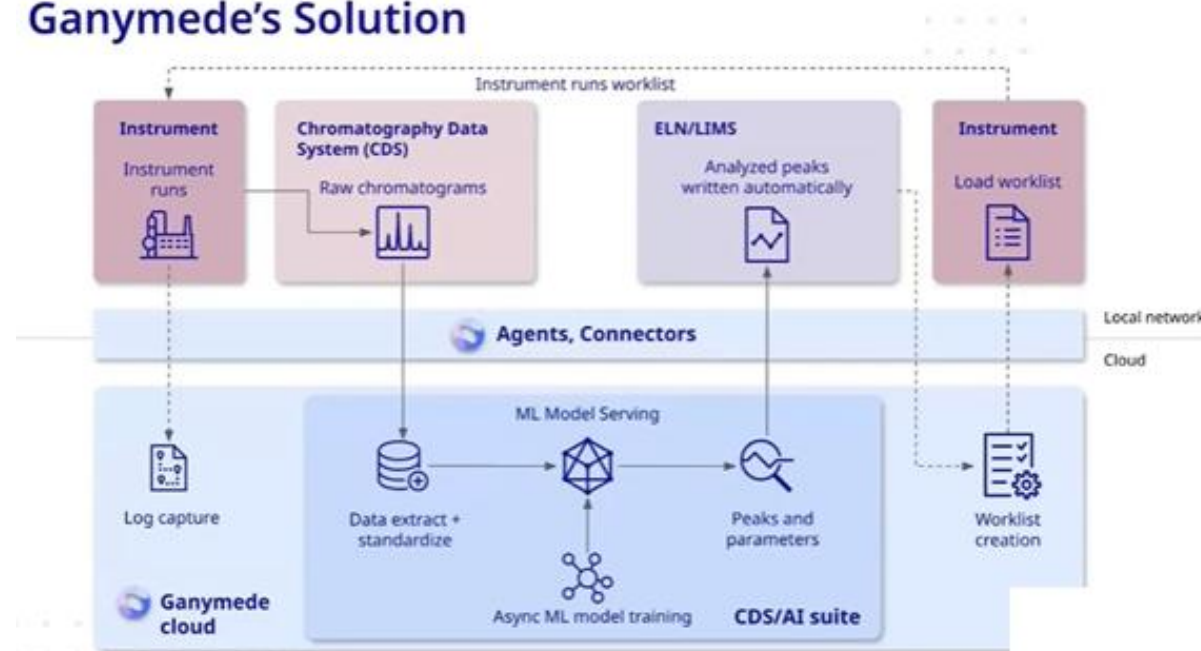
Takeda is currently in the Legal agreement phase to be able to demo the software and possibly do a pilot of the software.

Webinar Link:

<https://www.linkedin.com/events/aiforchromatographydatasystems724222273586171904/about/>

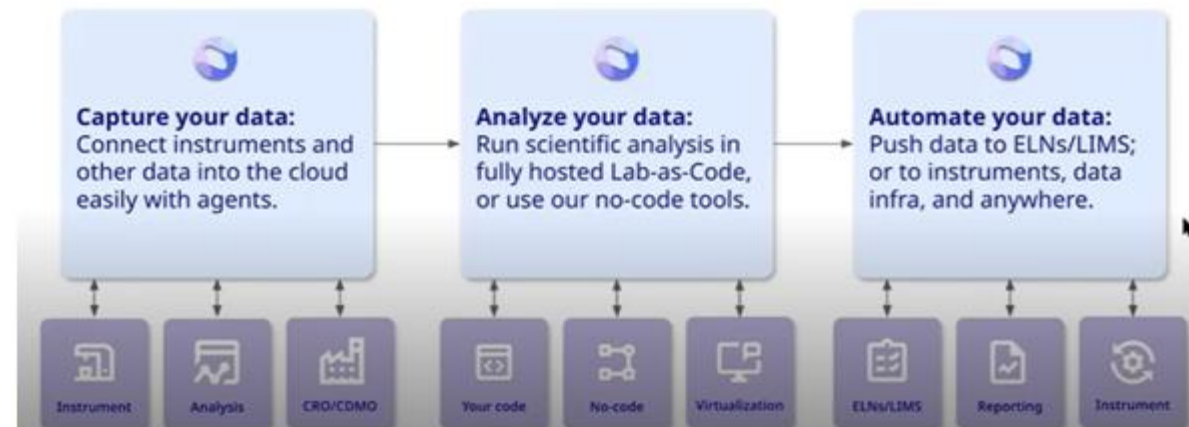


Ganymede's Solution



Ganymede's Paradigm

Ganymede is the Scientific Data Cloud (SDC) for instruments and apps like ELN/LIMS. Connect everything; turn data friction and risk into automated, traceable data via Lab-as-Code.



Real Time Multi Angle Light Scattering (RT-MALS)



Technology

Multiangle light scattering (MALS) describes a technique for measuring the light scattered by a sample into a plurality of angles. It is used for determining both the absolute molar mass and the average size of molecules in solution, by detecting how they scatter light.

Vendors

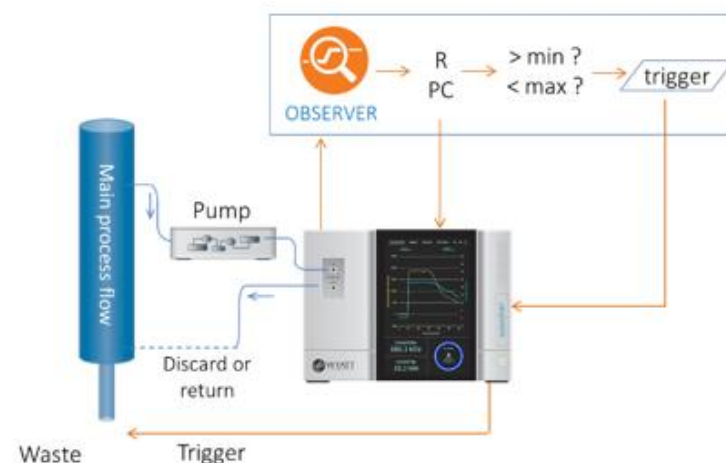
- Waters - Wyatt technologies

Measured parameters

- Average Molecular weight inline (Downstream)
- Average Radius of gyration inline (Downstream)

Experience

- Currently online set up ongoing for mAb polishing step



Source: <https://wyattfiles.s3.us-west-2.amazonaws.com/literature/white-papers/WP8007-RT-MALS-Real-time-product-attributes-from-lab-to-plant.pdf>