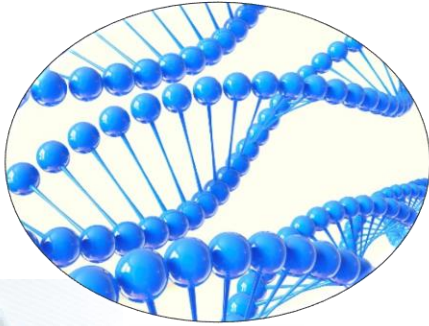


INDATECH

Innovative wide
UV-VIS analyser
for industrial
applications

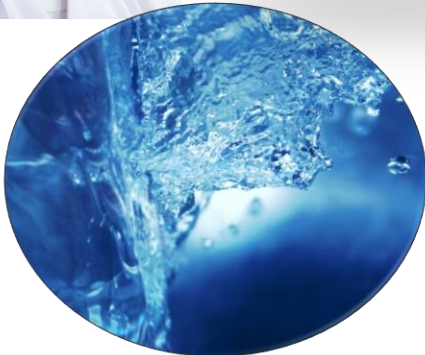
Your needs fulfilled !



I want to validate the purity level of my biotech product in downstream. I want to study injectable nanosuspension.



Producing beverage or consumer goods with the same color and turbidity attribute is critical for my market (sensory attribute for consumer)



I need to validate the cleaning procedure of my equipment and detect low concentration contamination in the waste water

System presentation



Hardware

- Two output channel (2 light sources and two spectrometer)
- One internal spectrometer to measure light source reference in the same time as the reference
- Measurement of temperature (on a flow cell for example)

Communication

- OPC-UA communication (SyntQ, Process pulse, SIPAT)
- Model importation (e.g PLS toolbox)



Robust and safe unit

- Stainless steel box
- Safety (UV) : fiber connexion have a double connexion.
- Protection from direct illumination from the operator
- Option for automatic cleaning of the probe

SPECIFICATIONS

Spectrometer – wide optical range 225-1000nm / Hamamatsu sensor with high sensitivity (ccd)

light source :185-1100nm. (all detail next slide); With shutter (to avoid over exposure of the product to uv) , lamp can be triggered to extend bulb life

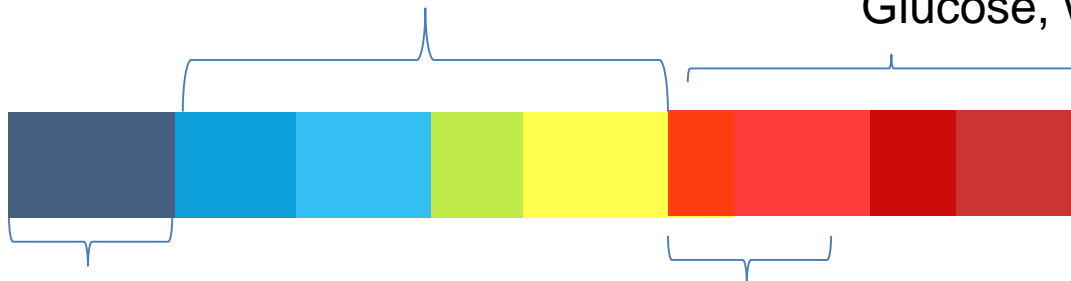
INTEREST OF WIDE SPECTRA TECHNOLOGY

VIS : 400-650 nm

Color, protein, Caroten, etc..

NIR :700-1000nm :

Glucose, water



UV : 220-400 nm

Protein, API, Petrochemical DCO,
DBO, Nanoparticle

NIR :830-860

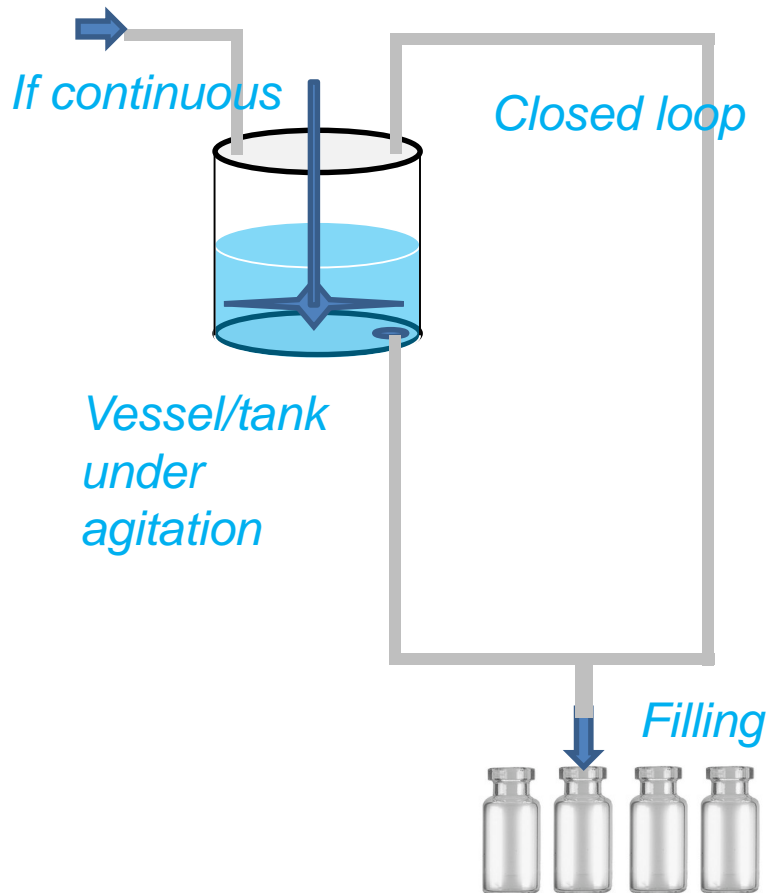
Turbidity

Possible accessories

- Transmission probe
- Transflexion probe / reflexion
- Flow cell (e.g 1/8)
- Retractable fitting to remove the probe during the process (e.g cleaning, calibration, maintenance)



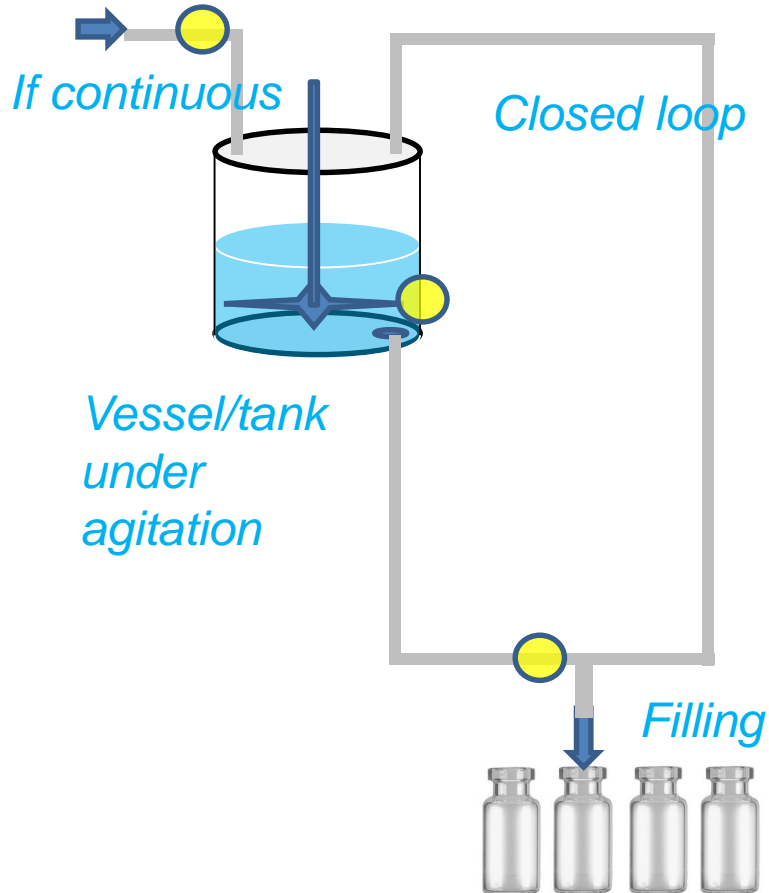
Exemple TYPICAL FILLING LINE

**Critical parameter**

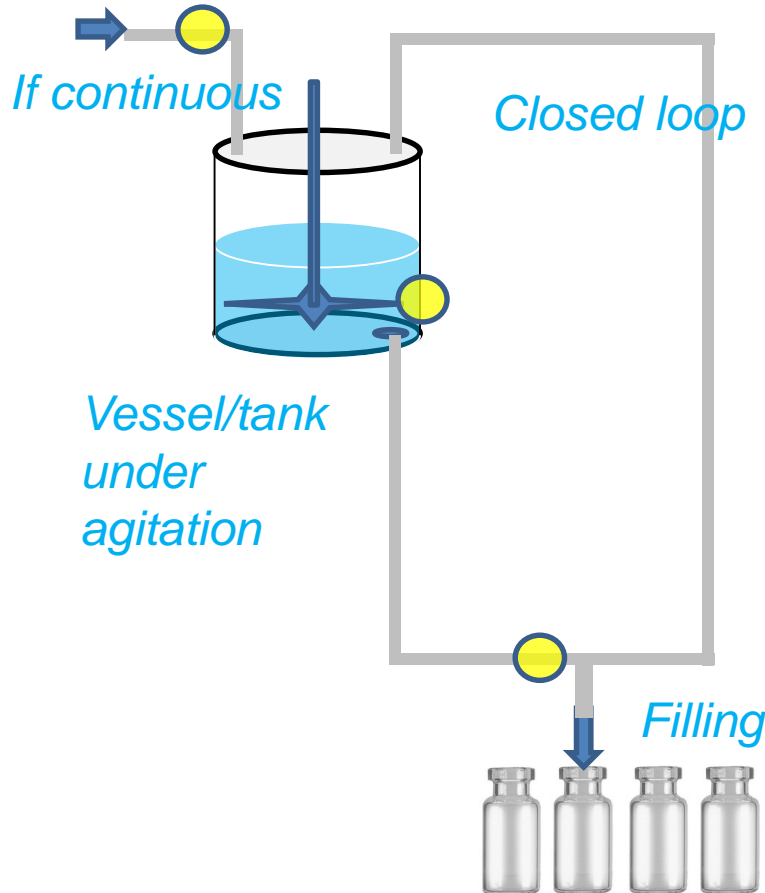
- Concentration of the product (e.g protein content)
- Physical properties remains the same (e.g turbidity, mean globule/particle size)
- Homogeneity
- Stability

Risk

- Product properties change over time
 - sedimentation, crystallization
 - fouling in the pipe
 - agglomeration
 - with low liquid volume shearing force change and may generate modification of product properties
 - modification of the product in the pipe before the filling

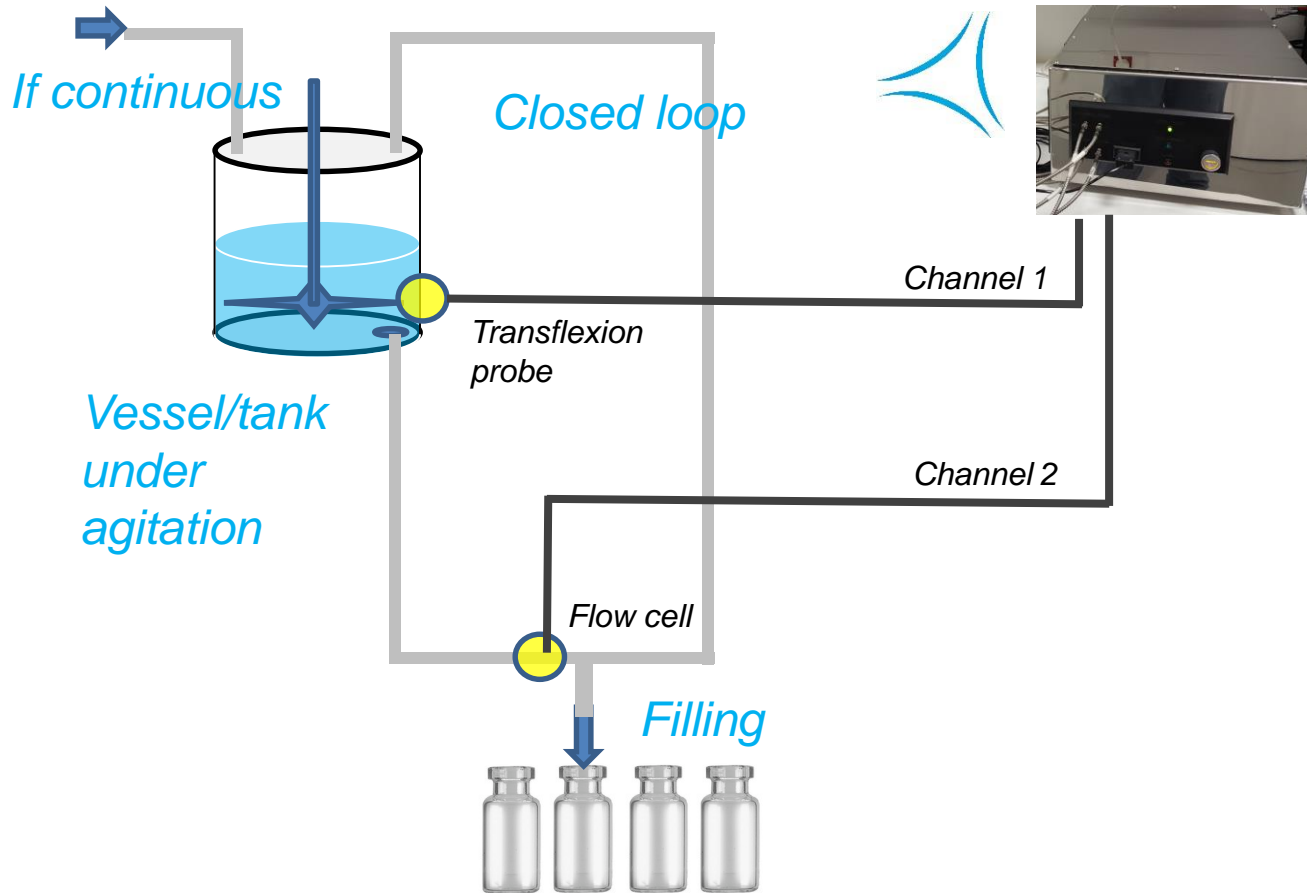
**Needs :**

Being able to monitor several point in the same time to provide the critical information over time such as concentration, purity, homogeneity or turbidity



INDATECH solution :

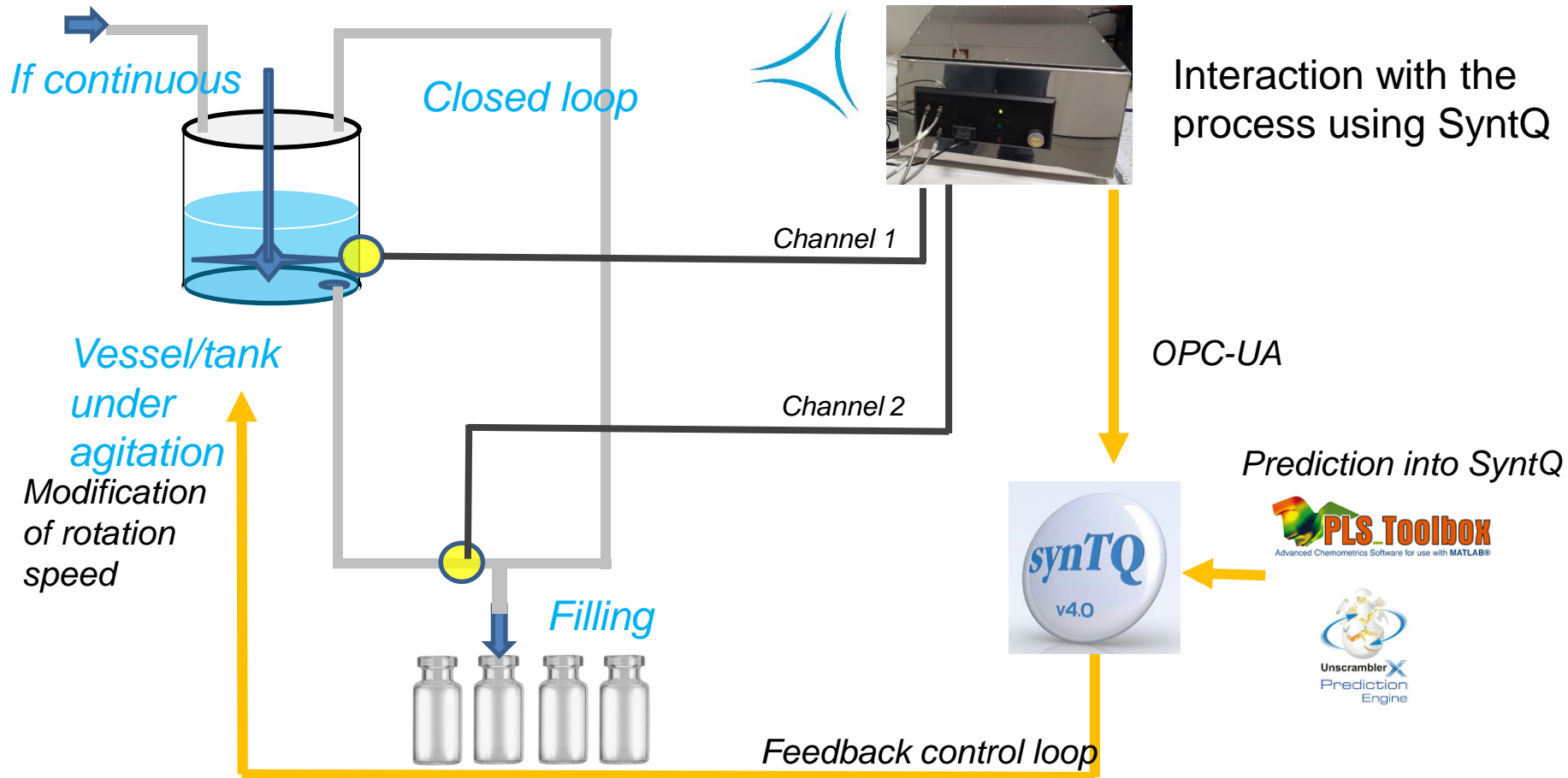
- Spectral range targeted for the chemical compounds
 - UV VIS (e.g Protein , API, etc..)
- Multipoint and simultaneous** measuring system
- Provide a real time mapping of the full filling line
- Feedback control loop possible using OPC UA (example modify rpm of the blade)



Direct prediction



Spectral measurement based on different probe type.
Direct prediction in INDATECH System



Customer testimonial



Indatech provided our development group a completed custom made PAT system, for a continuous monitoring and online release of our products.

This system has been designed for an easy development and method transfer, reaching responses time 60 times faster than the competition (1s response time compared to 60s) and an equipment flexibility that cannot be found in the pharma standard equipment suppliers.

We have been provided with a full support from Indatech team either on process and on technical development.'

Market applications



- Biotech and Pharma:
 - Prediction of protein concentration during a continuous down stream process
 - Analysis of water to identify residual API concentration
 - Analysis of nanoparticule suspensions
- Food & consumer goods
 - Analysis of color for detergent product in chemical industry
 - Analysis of color for beverage
- Water
 - DCO, DBO,
 - turbidity
 - hydrocarbon