PROMETHEUS

Project coordinator ACTIA

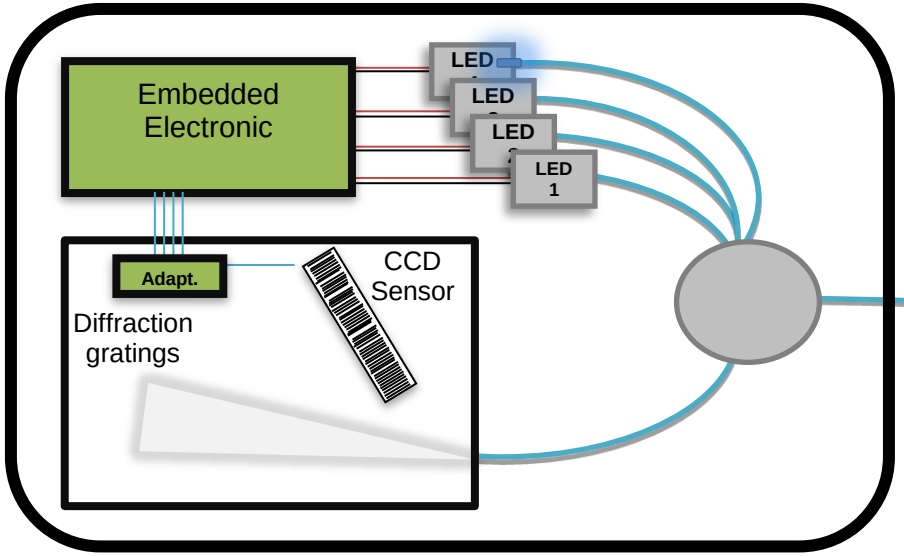
Monitoring of process contaminants in real time using the fluorescence-based tool Fluoralys for a rapid diagnosis of product and process safety

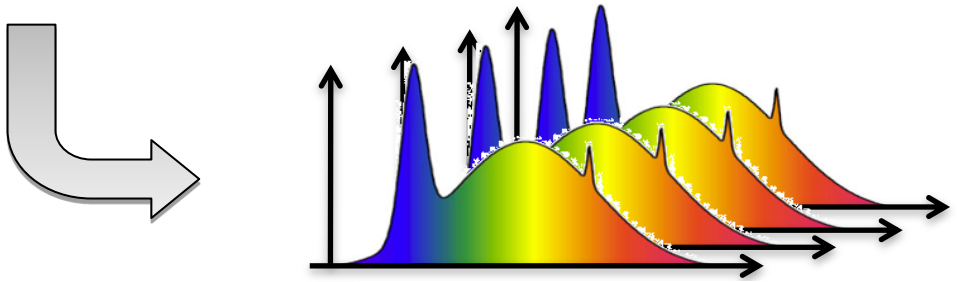
SPECTRALYS innovation

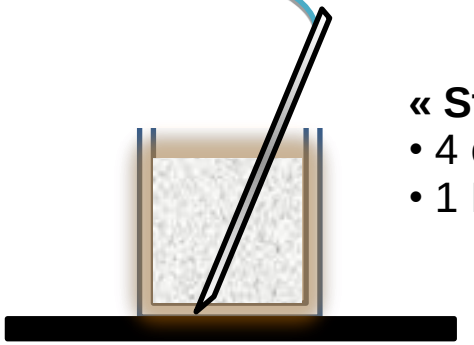
SEPTIEME PROGRAMME-CADRE

Scheme of the optical design and software

FLUORALYS







« Stylus » probe
- 4 excitation fibers.
- 1 Read fiber

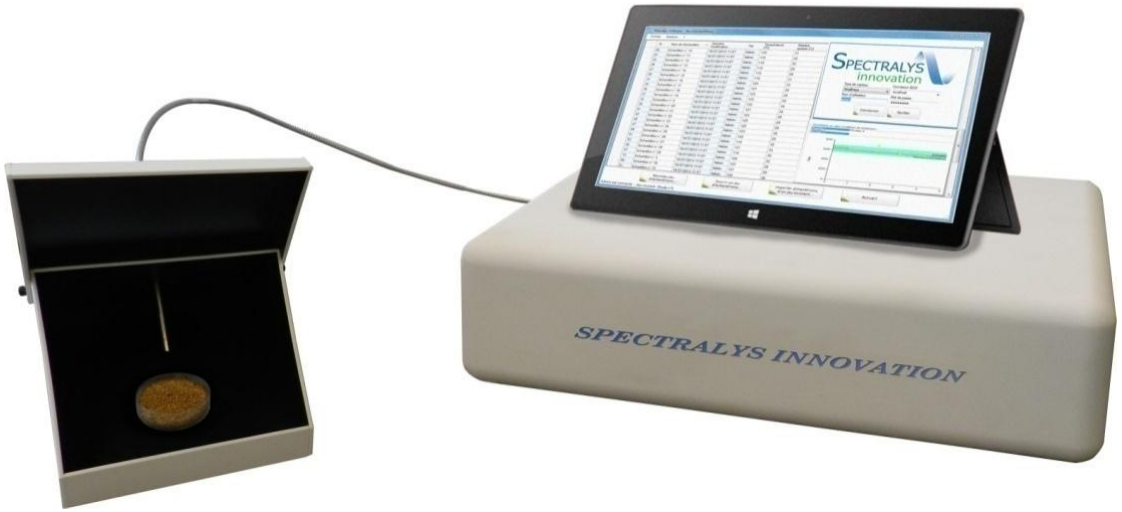
Spectral information
- Fluorescences.
- 4LED = 4 emission spectra

PROMETHEUS

Project coordinator ACTIA

Scheme of the optical design and software

FLUORALYS

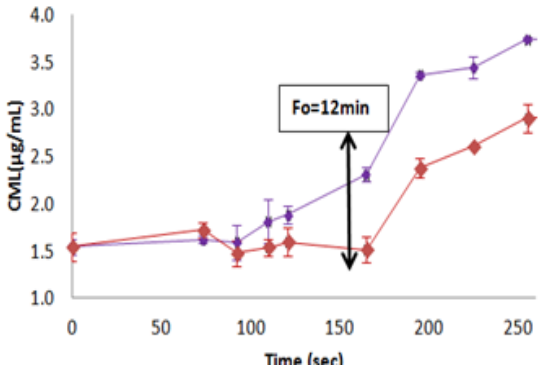


SOFTWARE

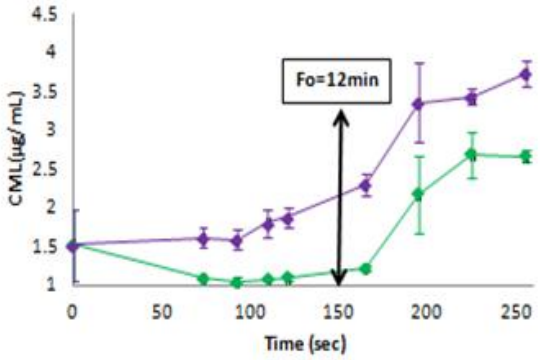
- Measurement controle
- Analysis of Fluorescence information
- Application of calibration models.
- Calculation of means and std
- Database
- Monitoring the control map.

Real time diagnosis on recipe sensitive to heat damage

CML

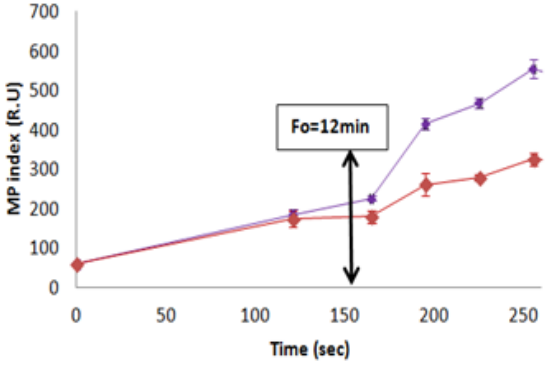


DHA + iron
DHA - iron

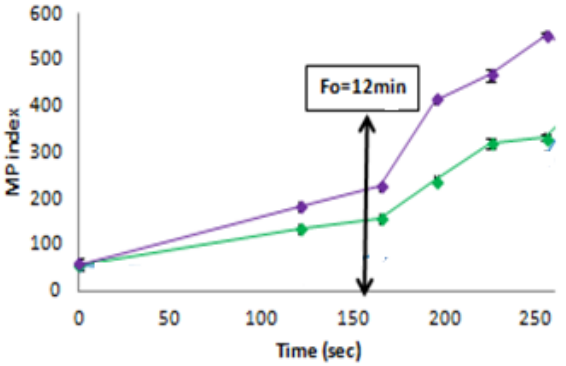


DHA + lactose + vitC
DHA + maltodextrin

Fluoralys



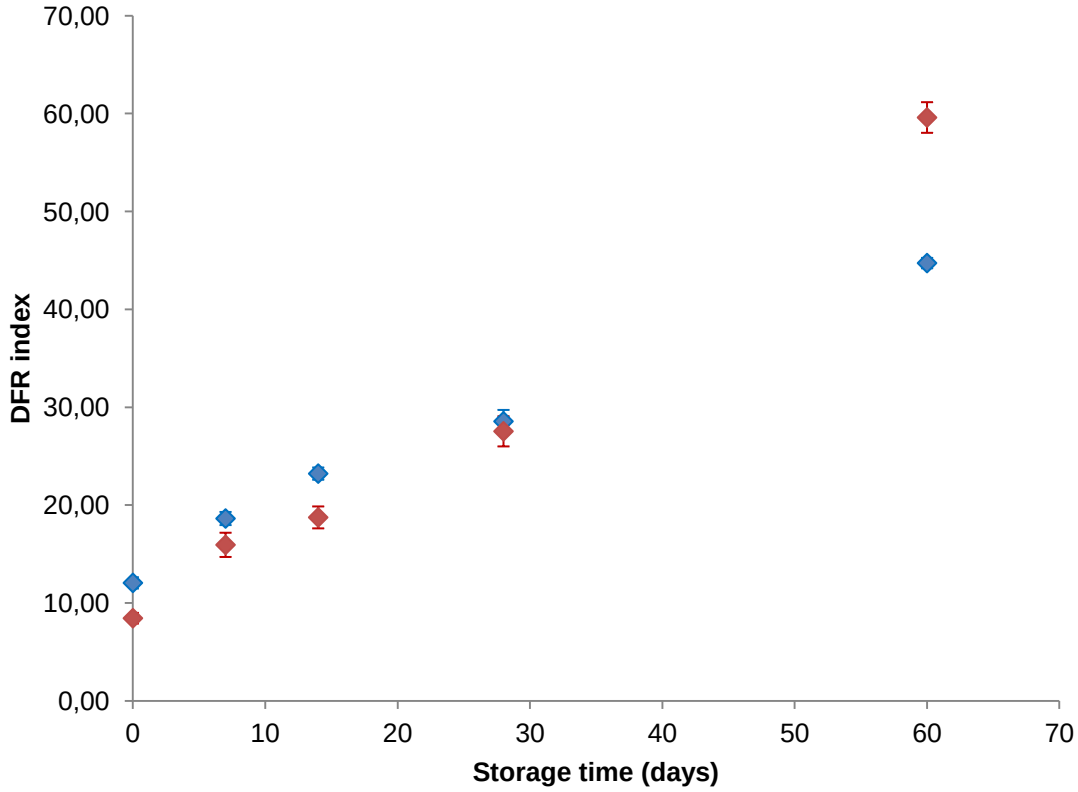
DHA + iron
DHA - iron



DHA + lactose + vitC
DHA + maltodextrin

Impact of storage

Accelerated for 60 days at 50° Celsius

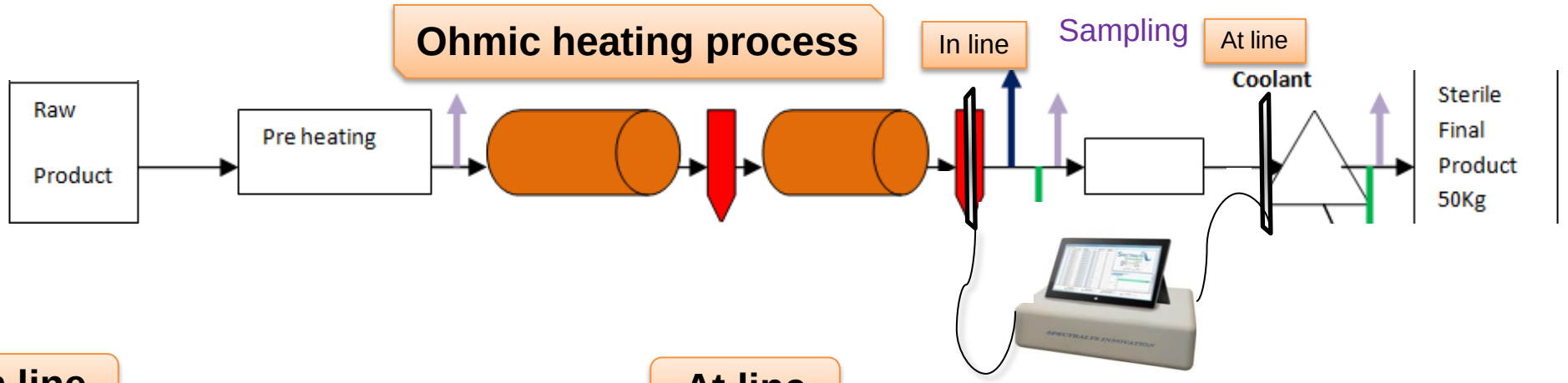


Formula A
Formula B

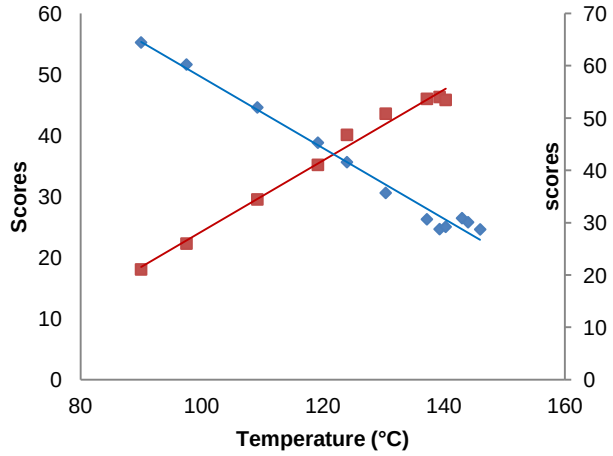
PROMETHEUS

Project coordinator ACTIA

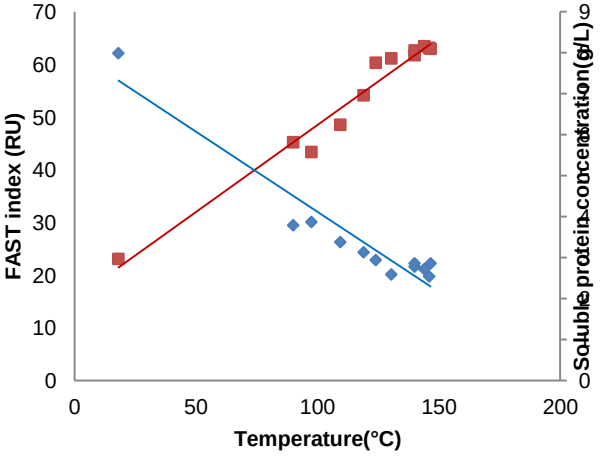
Infant formula heat process control using FLUORALYS



In line



At line

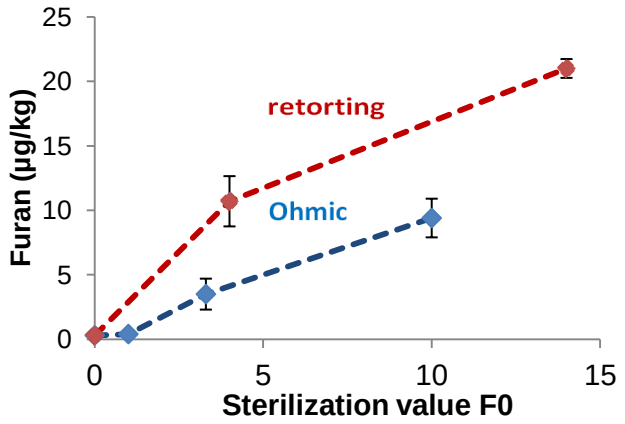


PROMETHEUS

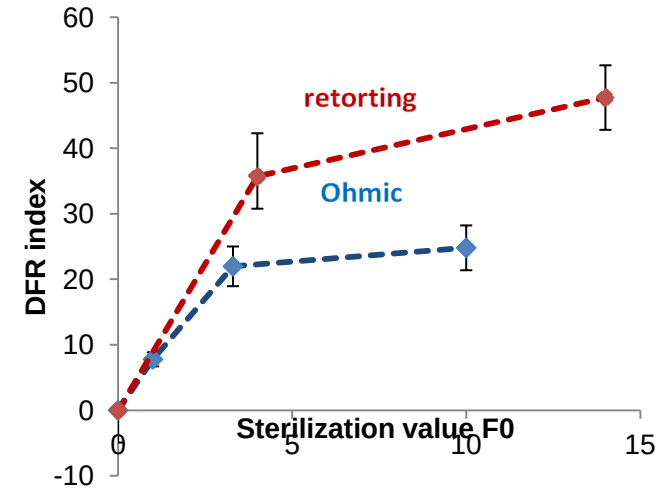
Project coordinator ACTIA

Rapid diagnosis on baby food quality using FLUORALYS

Real time comparison of 2 technologies

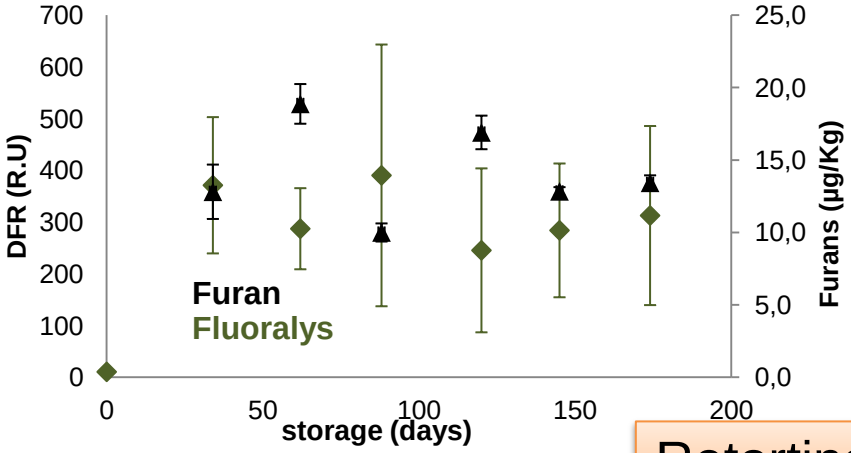


Furan

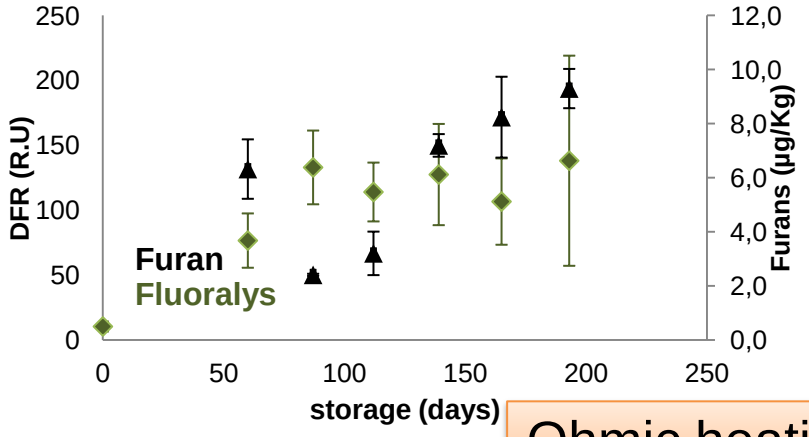


Fluoralys

Impact of storage



Retorting



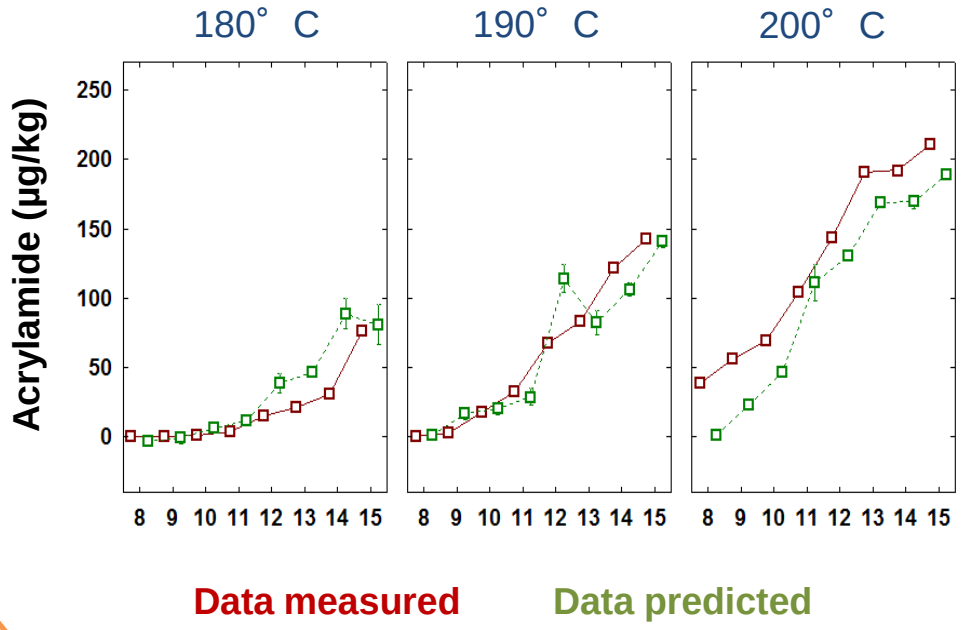
Ohmic heating

PROMETHEUS

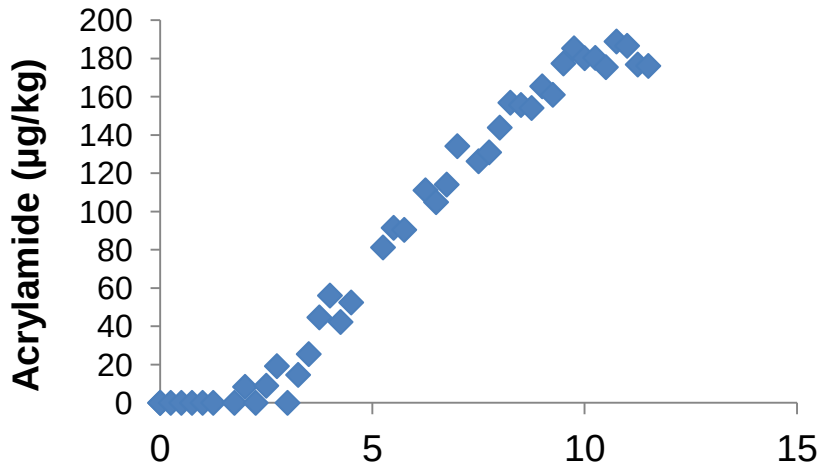
Project coordinator ACTIA

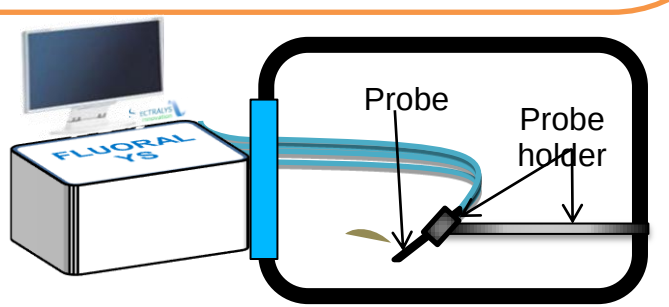
Monitoring acrylamide in biscuits using FLUORALYS

At line



In line



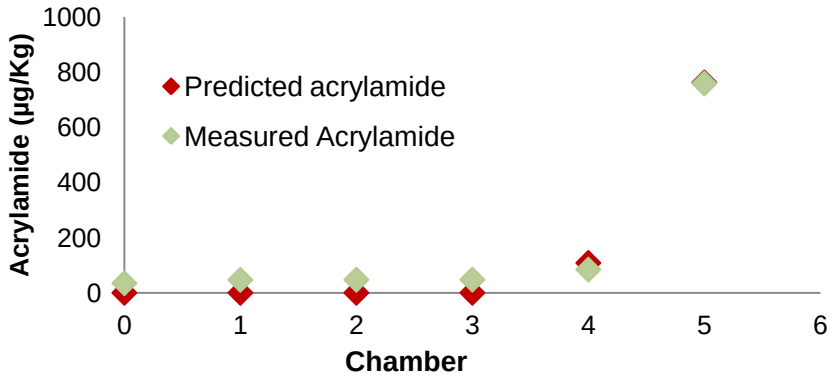


PROMETHEUS

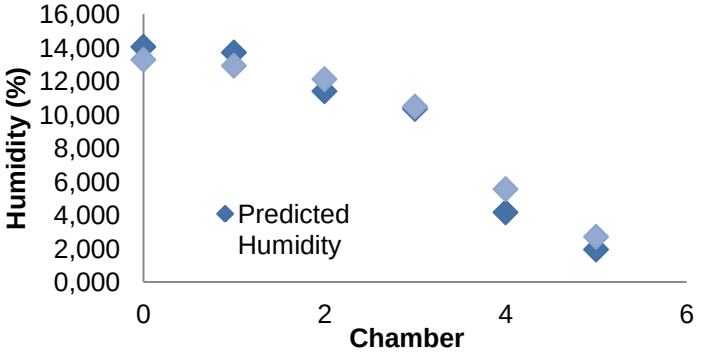
Project coordinator ACTIA

Industrial monitoring of acrylamide in biscuits in a multicriteria approach

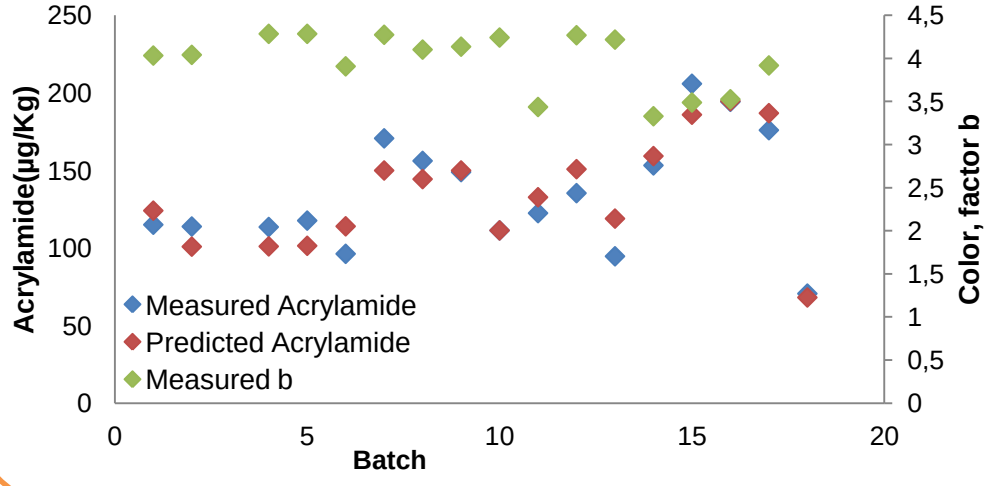
Acrylamide (µg/Kg)

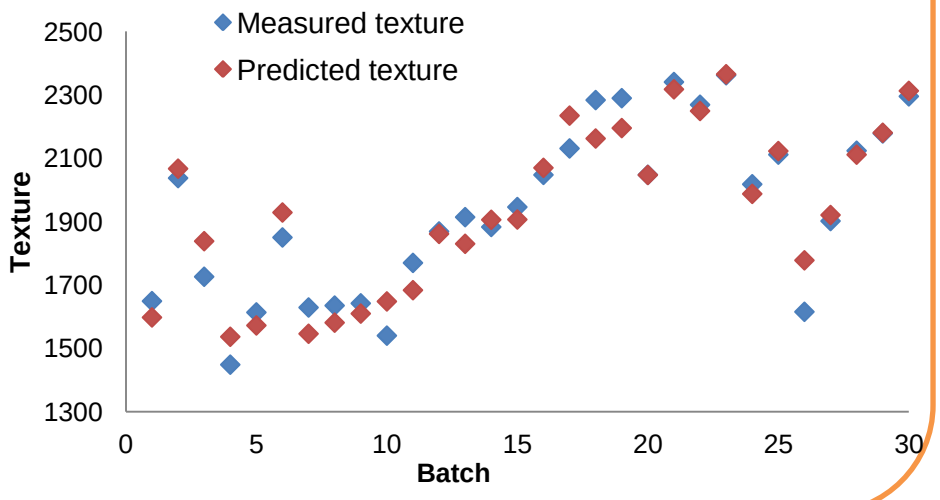


Humidity (%)



Monitoring of acrylamide and texture at industrial scale over production days





Conclusion

FLUORALYS is a non destructive fluorescence analyzer developed for real time, reliable and simple monitoring of process contaminants

- **For R&D purposes :**
  - impact of recipes/ingredients
  - interest of alternative technologies
  - prediction of storage effect
  - process optimization in a multicriteria approach

- **For quality control in PRODUCTION in a multicriteria approach:**
  - AT LINE in the final product for control map
  - IN LINE for implementation of corrective actions