

BUPAIC: BUTter Production Automation with In-line Control



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INTRODUCTION



Support for SMEs in adopting digital solutions to achieve a digital and ecological transition.



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Ingeniería

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- “Continuous measurement of the moisture content of the butter produced to automate the water dosing process, ensuring that the butter has a moisture content of less than 16%, as required by current legislation.”.
- “% moisture, fat and salt”



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PROJECT

TASK 1

Design of the mechanical and electrical installation system for the NIR sensor on the production line.

TASK 2

Development of a predictive model for % moisture, fat and salt in butter.

TASK 3

Validation of the correct functioning of the water dosing system governed by the NIR sensor data.

TASK 4:

Integration of data into Ilaçor's ERP.



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BUTTER PRODUCTION LINE



CHURNING

SEPARATION

DRYING AND
PRESSING

KNEADING

SALTING

VACUUM
KNEADING

MOISTURE
CONTROL

STORING

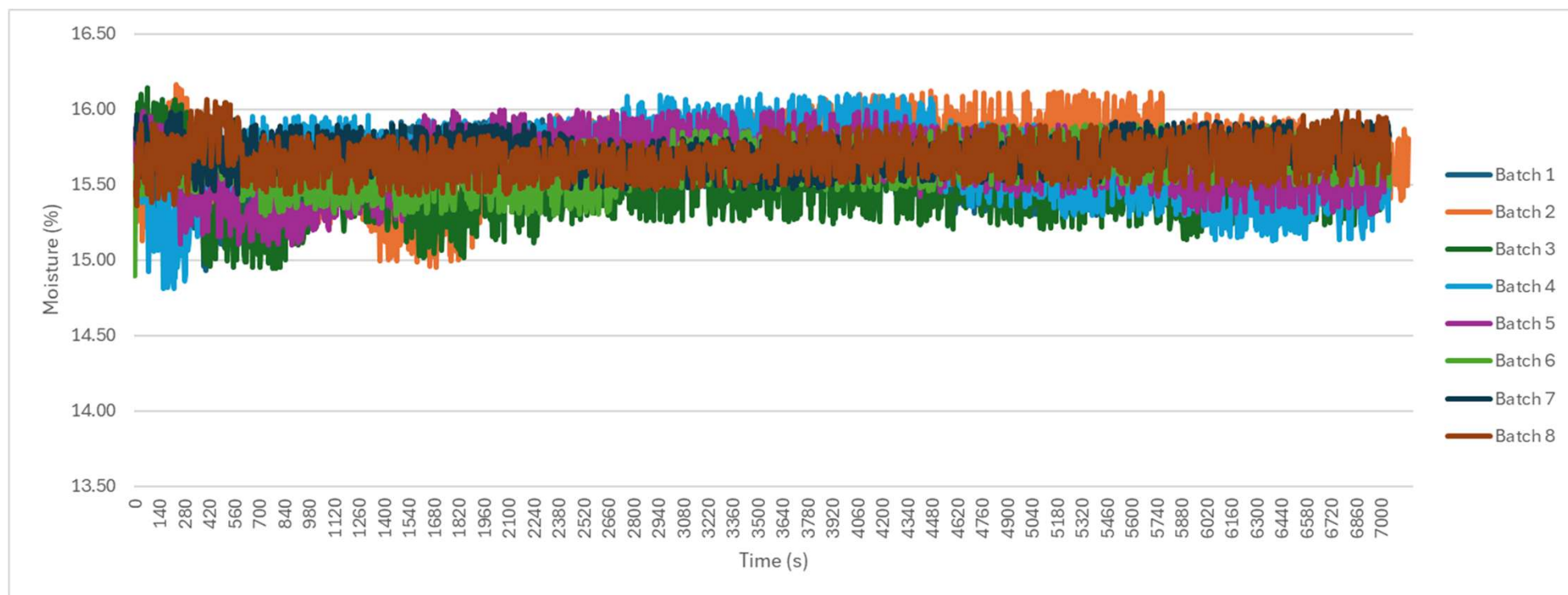


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REAL-TIME MOISTURE PERCENTAGE MONITORING





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REAL-TIME MOISTURE PERCENTAGE MONITORING

Batch	Max	Min	Mean	Lab value	Error (abs. value)
1	15.97	14.93	15.60	15.8	0.20
2	16.17	14.95	15.70	15.8	0.10
3	16.15	14.92	15.49	15.7	0.21
4	16.10	14.81	15.67	15.8	0.13
5	16.00	15.10	15.63	15.8	0.17
6	15.90	14.90	15.61	15.8	0.19
7	15.98	15.44	15.71	15.5	0.21
8	16.06	15.36	15.68	15.9	0.22
Mean error					0.18

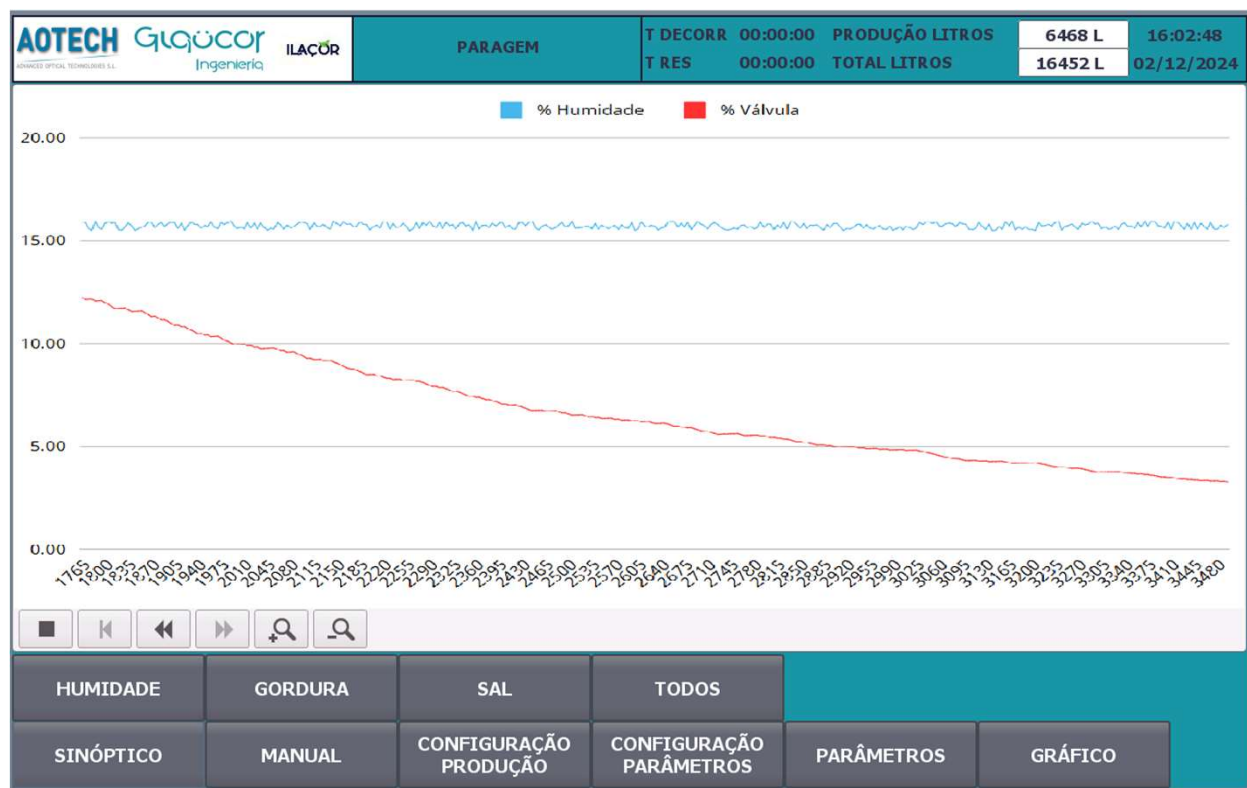


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MOISTURE ADJUSTMENT



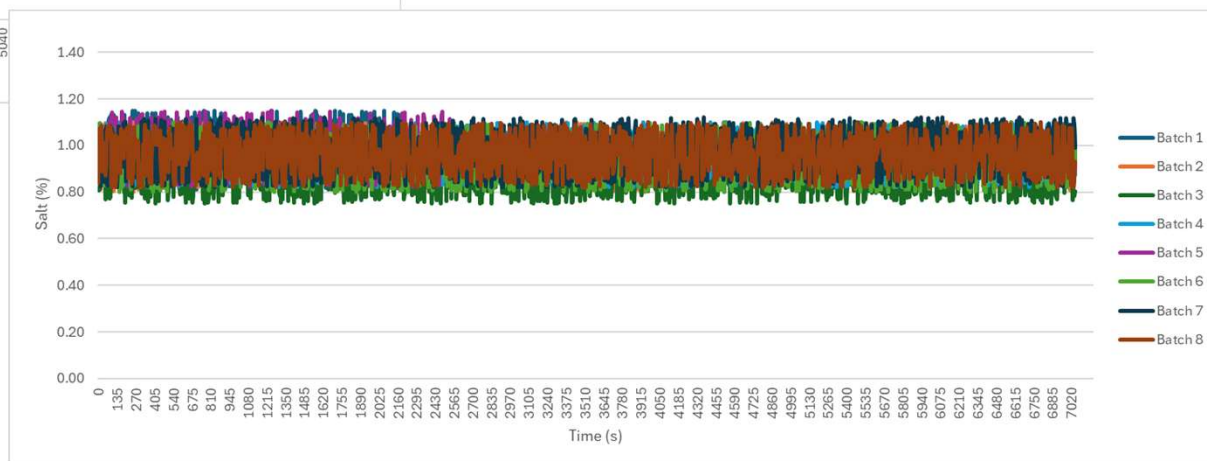
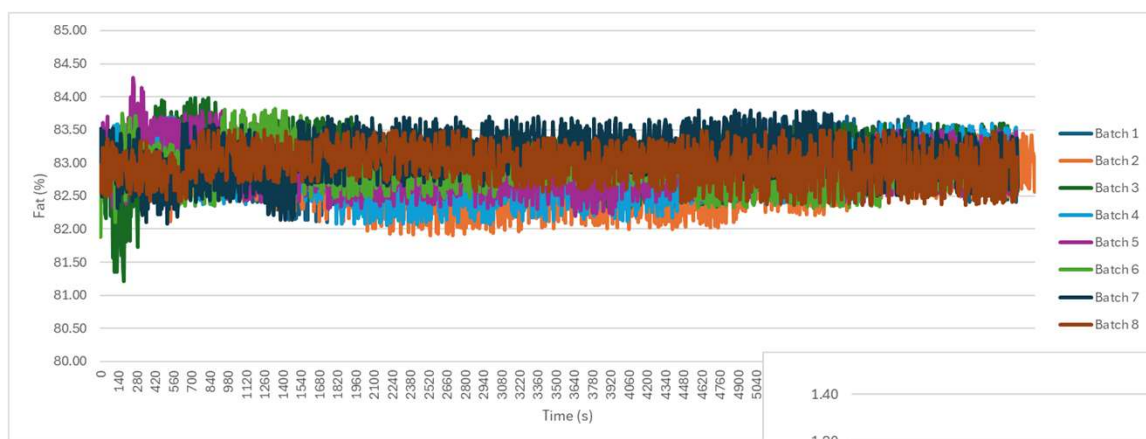


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REAL-TIME MONITORING OF FAT AND SALT PERCENTAGE

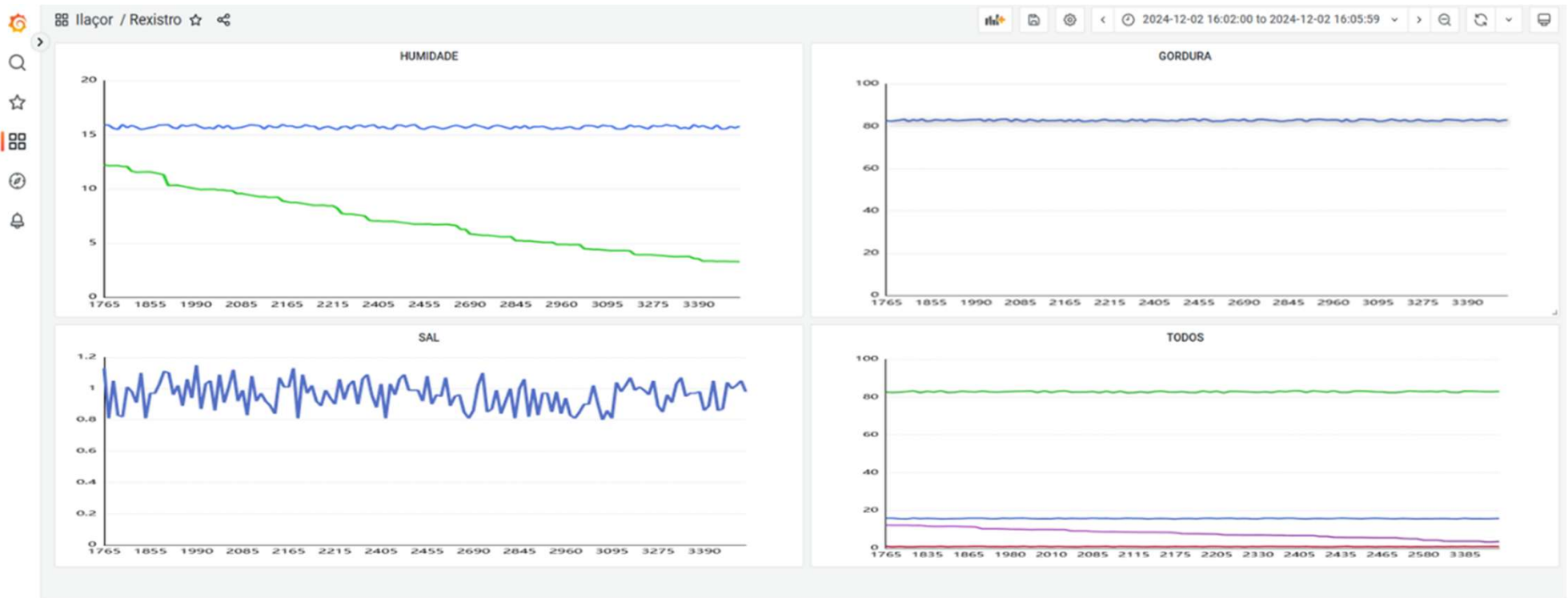




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PLATFORM FOR QUALITY DATA MANAGEMENT





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