PRESS RELEASE
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Real-time control and optimization of batch industrial processes (ABC4I project)

An innovative approach leveraging advances in online analysis, digitalization, and AI.

In a world of perpetual and rapid change, digital transformation enables companies to improve competitiveness and reduce production costs.
This is an important asset and a priority for Adisseo, which aims to accelerate its initiatives and focus on data management.
The ABC4I project is part of Industrialization 4.0, which increasingly integrates the applications of Artificial Intelligence (AI) and Machine Learning (ML).

In this project, Optimistik, Axel'One, Probayes and INSA Lyon/IMP laboratory are pooling their expertise to develop a complete digital chain, from online process analysis to process control through prediction and optimization algorithms. This digital chain will be tested on the processes of the two industrial partners: Adisseo for vitamin A synthesis and Elkem for silicone polymerization.

For Adisseo, this 3-year project will enable the development of a statistical analysis tool focused on the optimization of the vitamin A batch process, and the creation of in-house competencies in the field of AI/ML.
It will also contribute to the development of real-time process optimization software that will provide recommendations for modifying operating parameters and continuously optimizing the process. Adisseo aims to:

- Improve the cost of vitamin A production by optimizing the yields of certain chemical stages, followed by a reduction in raw material consumption.

- Eliminate sources of process drift for optimum operating performance.

- Reduce the carbon footprint of the process through lower waste, raw material, and energy consumption.

The ABC4I project is funded by Bpifrance as part of the "i-Démo - Support for structuring R&D&I projects" call for proposals of the France 2030 plan.
A dozen companies in the industry sector have also expressed their interest, as real-time automated control with optimized batch processes is a significant challenge.

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Adisseo is one of the world's leading experts in feed additives.
The group relies on its 8 research centers and its production sites based in Europe, USA, China and Thailand to design, produce and market nutritional solutions for sustainable animal feed.

Adisseo, one of the main subsidiaries of China National BlueStar, employs over 2,650 employees and serves around 4,200 customers in over 110 different countries through its global distribution network. In 2022 Adisseo achieved a turnover of 2.04 billion euros.

Optimistik is a Cloud solutions provider dedicated to the digitalization and management of factories in leveraging their data, known as “Data Driven Plant Operations”. These solutions enable industrial companies to improve their production processes using Artificial Intelligence (AI) and the Internet of Things (IoT) by making these technologies accessible at all organizational levels.
Axel'One's mission is to mutualize services, tools, and expertise to reduce the costs and risks of scaling up industrial processes. The Axel'One platform supports R&D projects and small and medium-sized enterprises in the fields of advanced materials and innovative processes.

Probayes has been developing customized Artificial Intelligence solutions in collaboration with the customer business teams, since 2003. A team of Data Scientists is dedicated to each expertise, Machine Learning and Deep Learning, Vision, Natural Language Processing, Operational Research. Probayes supports its customers from the identification of use cases to the industrialization of solutions and the training of business teams.

Elkem is one of the world's leading providers of advanced silicon-based materials shaping a better and more sustainable future. The company develops silicones, silicon products and carbon solutions by combining natural raw materials, renewable energy, and human ingenuity. Elkem helps its customers create and improve essential innovations like electric mobility, digital communications, health, and personal care as well as smarter and more sustainable cities.

IMP (Materials Engineering) laboratory is a Joint Research Unit (UMR CNRS 5223 INSA Lyon/Université Claude Bernard Lyon 1/Université Jean Monnet Saint-Étienne) that develops activities ranging from fundamental research to applied objectives, from the synthesis of new macromolecular architectures to polymer formulation for establishing structure/property relationships.