Machine learning for the Chemicals Industry

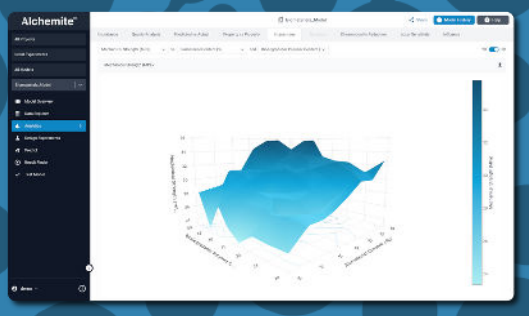
Better products and processes - Less cost and waste

> "We identified a route requiring **five times fewer experiments**
>
> **Johnson Matthey** found improved formulation designs for catalysts

Optimise chemical products and processes, exploiting all available data

Design more efficient experimental programs, saving months of work

Find novel solutions to market, regulatory, and environmental challenges



Analysing property data in Alchemite™

Are you developing new chemical compounds, designing formulations, or aiming to improve or manage chemical processes? What if you could reduce the amount of costly experiment, find new solutions, and speed up process improvement decisions – all by making more effective use of your data?

Leaders in chemical and process innovation want to apply novel machine learning technologies to extract more value from their experimental, simulation, or production data. But most machine learning approaches fail when applied to real-world data from these sources, because such data is often messy and incomplete. And machine learning can be difficult to implement, learn, and use.

Alchemite™ Suite is machine learning made easy. It harnesses the power of the Alchemite™ algorithm, which can handle difficult experimental and process data, through a series of task-focused apps. You can:

- Efficiently design experiments, focusing on the most productive routes and **reducing workloads by 50-80%** compared to conventional DOE methods
- Investigate new chemistries and formulations, finding improved solutions while **cutting time-to-market**
- Extract maximum value from data, identifying hidden relationships and generating **breakthrough insights**.

Find our more: Read our white paper, *Seven examples of how materials and chemicals companies innovate with AI.* **intellegens.com/whitepapers**

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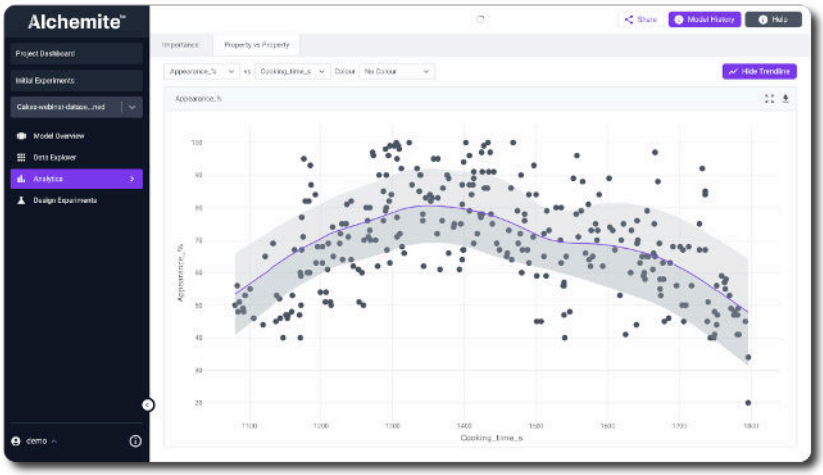

Alchemite™ provides scientists with quick, easy access to advanced machine methods and powerful graphical analytics via a series of easy-to-use apps.

Case studies

Formulation development – Domino Printing Sciences cut time-to-market for ink reformulation by months. Similar applications have included plastics, coatings, paints, foodstuffs, and pharmaceuticals.

Design of catalysts – Johnson Matthey increased yields and reduced experimental workloads in projects on catalysts for clean air and life science applications.

Flavours and fragrances – IFF successfully predicted the sensory properties of chemical compounds based on sparse physicochemical and sensory data, saving costly experimental time and resource.

Process optimisation – Alchemite™ is regularly applied to optimise parameters when designing or improving a chemical process, helping to ensure process quality and lower energy usage.

Alchemite™ Suite

Alchemite™ offers a suite of easy-to-use apps, each focused on a key R&D challenge. Give the right app to the right team member, speeding and informing their work. Then share results and collaborate across your team, creating an integrated machine learning solution for materials R&D.

Alchemite™ Viewer	Share and view results, enabling collaboration and decision-making.
Alchemite™ Explorer	Quickly generate models, test hypotheses, explore key relationships.
Alchemite™ Designer	Set up and run Design of Experiments projects in a few button clicks.
Alchemite™ Innovator	The complete ML toolkit to support materials design and development.
Alchemite™ Architect	API access to integrate and automate powerful ML.

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