

SynSilico® launches INNOptimizer™ test version - a powerful web-based Bayesian Optimization tool for smarter R&D

INNOptimizer is using latest Bayesian Optimization algorithms and a broad set of analytical tools to guide optimizations with minimum experimentation needed.

GELEEN, LIMBURG, NETHERLANDS, July 2, 2025 /EINPresswire.com/ -- [SynSilico](https://www.synsilico.com), a pioneer in AI-driven innovation for scientific and industrial research, is proud to announce the release of [INNOptimizer™](https://www.synsilico.com/optimizer) pilot version, a cutting-edge web-based optimization platform

designed to transform how researchers and engineers approach experimentation.

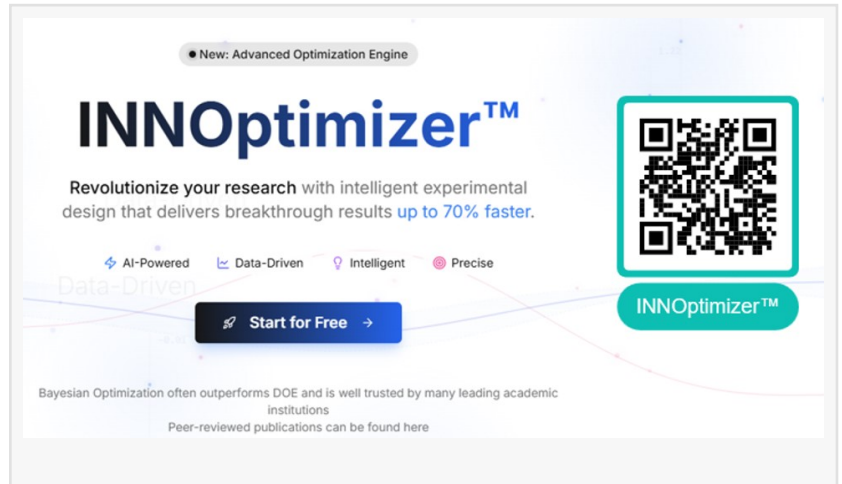
INNOptimizer™ leverages the power of [Bayesian Optimization](#) to significantly reduce the number of experiments required in the development and optimization of processes, protocols, formulations, and compositions across a wide range of industries including chemical manufacturing, materials science, pharmaceuticals, food technology, and beyond.

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Don't waste time and money with poor experimental design - use INNOptimizer™ to guide your experiments with state-of-the art Bayesian Optimization algorithms.”

Oliver May (GM Synsilico)

Accessible at optimizer.synsilico.com, INNOptimizer™ provides users with an intuitive and configurable platform that integrates advanced analytics, to guide data-driven experimental design strategies. The tool is especially well-suited for applications in Quality by Design (QbD) studies, offering unparalleled insights into design spaces and the complex relationships between input variables and performance/quality outcomes.



Accelerate Innovation with Bayesian Intelligence:

At its core, INNOptimizer™ uses Bayesian Optimization, a probabilistic model-based approach to guide experimental design intelligently and efficiently. This methodology excels in situations where experiments are expensive, time-consuming, or resource-intensive, making it ideal for

scientific research, product development, and process optimization.

By modeling the behavior of systems and continuously learning from results, INNOptimizer™ proposes the most promising experimental conditions to test next. This reduces redundant experimentation and allows users to reach their goals with fewer iterations—saving both time and cost.

Key Features and Capabilities:

- **Flexible Optimization Engine:** INNOptimizer™ is easily adaptable by users for virtually any experimental optimization task. Whether fine-tuning a chemical reaction, optimizing a formulation, or improving a manufacturing protocol, users can quickly configure optimization scenarios to suit their needs.
- **Insightful Design Space Visualization:** The platform provides rich visualization and analytics tools to help users understand the shape and structure of their design space. These tools uncover hidden trends, interactions, and dependencies among input and output parameters—offering deeper understanding for decision-making and troubleshooting.
- **Interactive Analytical Dashboard:** A comprehensive dashboard allows users to explore multi-dimensional parameter interactions, response surface maps, Pareto frontiers, and convergence behaviors. These tools are invaluable for hypothesis generation, model validation, and strategic planning.
- **Free Trial Version:** A fully functional trial version of INNOptimizer™ is available at no cost, providing users with access to a broad suite of analytical features to evaluate its capabilities before full-scale deployment.
- **API Integration for Automation and Scalability:** INNOptimizer includes a robust API, enabling integration into external software solutions, laboratory automation systems, and digital co-pilots. This makes it ideal for self-driving lab applications and closed-loop experimental workflows, where the optimizer can guide and automate decision-making in real-time.

A Tool for the Era of Digital Experimentation:

The traditional approach to experimental design often involves trial-and-error and one-variable-at-a-time (OVAT) strategies that can be both inefficient and limiting. INNOptimizer™ replaces these legacy methods with a modern, algorithm-driven framework that supports:

- Multivariate Experimental Design
- Sequential Learning with Uncertainty Quantification
- Data-Efficient Exploration and Exploitation
- Support for Noisy, Complex, or Black-Box Systems

As industries increasingly adopt digital transformation and AI-driven R&D, INNOptimizer™ provides a scalable and intelligent infrastructure to accelerate discovery and innovation across domains.

Unlock the Power of Your Data:

With continued use, customers build a rich dataset of experiments and outcomes in their private INNOptimizer™ environment. SynSilico offers custom support services to help organizations leverage this growing data asset, including:

- Custom AI Model Training: Using the accumulated data, SynSilico can help train predictive machine learning models for property or performance forecasting, feature importance analysis, and automated recommendations.
- Data Strategy Consulting: Expert support to design data collection strategies, improve data quality, and extract actionable insights from historical or live experiments.
- Tailored Solutions: Integration with existing enterprise tools, laboratory information systems (LIMS), or custom digital platforms to create end-to-end optimization pipelines.

Applications Across Diverse Industries:

INNOptimizer™ has broad relevance in sectors where formulation, process conditions, or materials must be finely tuned for optimal performance. Current and potential use cases include:

- Chemical Industry: Reaction condition optimization, catalyst screening, and synthesis parameter tuning.
- Pharmaceuticals: Drug formulation optimization, bioprocess design, and QbD-based protocol refinement.
- Materials Science: Composite design, additive manufacturing parameters, and property-targeted materials development.
- Food Technology: Recipe optimization for taste, texture, nutrition, and shelf life.
- Agrochemicals: Fertilizer formulation, crop treatment protocols, and environmental performance balancing.

Get Started Today:

Interested users can explore INNOptimizer™ by visiting optimizer.synsilico.com, where a free trial version is available for immediate use. No installation is required—just log in and begin optimizing your experiments.

About SynSilico:

SynSilico is an innovative technology company at the intersection of artificial intelligence, digital experimentation, and applied science. The company develops powerful tools and platforms that enhance R&D productivity, accelerate innovation, and enable smarter decision-making in complex systems. Through advanced modeling, machine learning, and user-centric design, SynSilico empowers scientists and engineers across the globe to rethink how experimentation is done.

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