

Automated laboratory robotics with SciYbotic Labs

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The Optimal Group is advancing automated laboratory analysis processes across the pharmaceutical sector with the launch of the SciYbotic Labs range. The new solutions make analysis faster with a higher level of consistency, allowing pharmaceutical companies to achieve greater levels of efficiency, conformity and profitability.

The SciYbotic Labs series was developed by the Optimal Group, which is part of SciY – a vendor agnostic software brand that offers a wide range of scientific software solutions throughout the entire life sciences value chain. The new range combines a range of robotics, including autonomous mobile robots (AMRs) together with the synTQ software platform to create a self-contained workflow and analysis tool. The setup is regulatory compliant and capable of handling virtually all aspects of wet and dry laboratory testing without any human intervention.

Automating analytical testing frees scientists from the routine, manual tasks involved in quality control, such as transporting tablets across a production facility, preparing samples, and loading analysis instruments. This allows scientists to instead spend their time on projects that make use of their training and expertise, which reduces costs and unlocks value for the company. Additionally, the system automatically captures all data, ensuring complete data integrity.

SciYbotic Labs is fully customisable, with workflows able to incorporate the robot(s) required for your specific analytical methods and space requirements. AMRs can be used to transport samples around laboratories or between manufacturing and

laboratory facilities. An initial Smart Laboratory deployment may only include static, bench mounted robot(s) that can handle sample preparation and analysis tasks, and loading the samples into local instruments. If mobility is required for sample collection or transport, for example to flexibly load 'remote' instruments such as HPLCs/UPLCs, then an AMR may be invaluable.

All aspects of workflow management and execution, plus analysis and storage, are managed by synTQ, a leading PAT (Process Analytical Technology) knowledge management software platform capable of hosting chemometric and other predictive models. The software also generates intuitive dashboards and allows users to easily coordinate all testing and robotic activities.

Because synTQ stores all of the validated analytical workflows and methods, SciYbotic Labs can help drive collaboration and standardisation across all of a company's facilities, no matter where they are based in the world. This can help a company adopt the same analytical method in different laboratories with different layouts without the need for repeated analytical method revalidation.

Martin Gadsby, Chairman at Optimal Group, comments: "By combining Optimal Industrial Automation's expertise in complete automation solutions and Optimal Industrial Technologies' PAT knowledge and synTQ software platform, the Optimal Group is perfectly placed to help enable accurate, reliable and more consistent laboratory testing. We believe the ease with which validated analytical methods can be reused by facilities around the globe with minimal revalidation to be a unique feature of our offering.

"This new solution will allow pharmaceutical companies worldwide to operate more consistently and efficiently, and we look forward to supporting customers implement their own automated setups."

Image captions:

Image 1: The new range combines a range of robotics, including autonomous mobile robots (AMRs) together with the synTQ software platform to create a self-contained workflow and analysis tool.

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About Optimal Industrial Automation (OIA)

Optimal Industrial Automation has more than 30 years' experience building, integrating and optimising manufacturing automation systems for challenging and highly regulated industries. Projects are typically for the pharmaceutical, life science, chemical, aerospace, green energy, food & beverage and other high-value process sectors. The company's primary aim is to deliver measurable reductions in production costs, while finding substantial improvements in productivity, product quality and business sustainability. Part of its capability in achieving this aim is experience in the implementation of Optimal's print and inspect system product – synTI®, plus sister company Optimal Industrial Technologies' leading PAT based process management software platform synTQ.

The company employs a large technical team qualified in software, electrical, electronic, vision and control hardware disciplines. The team has built and developed individual machines and process skids to meet regulations such as FDA 21 CFR Part 210/211 – Pharmaceutical Industry GMPs, and FDA 21 CFR Part 11 – Electronic Records and Signatures. It is also ISO accredited and has years of experience working within GAMP guidelines.

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