VareseNews

Laboratory automation serving scientific research

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Laboratories provide important data, such as blood tests and the effects of a specific treatment, so they must act with precision, speed and efficiency. In this way, doctors can quickly diagnose and make important discoveries that can save human lives.

Laboratory automation entails the application of technologies to carry out manual activities, by exploiting such tools as **Artificial Intelligence**, **machine learning** and **computer vision**.

How to automate clinical laboratories

Clinical laboratories work on an ongoing basis and, everyday, they have to manage and process data from hospitals and clinics quickly, accurately and safely. In this particular sector, process automation is widespread, also by virtue of its versatile characteristics.

Indeed, in clinical laboratories, various solutions have become widespread, for example, computer vision, for reading barcodes, assistance in performing precise movements with robots, and identification of samples.

In particular, robots, which are used for handling and manipulating liquids, the genome sequencers and high-content and high-performing screening, have become valuable tools, and are now indispensable for scientists and researchers involved in developing medicines.

Thanks to **robotic process automation (RPA),** a technology which uses software to automate repetitive tasks, researchers can carry out more experiments and find new drugs more quickly, to treat diseases.

Italy is adapting to the new demands of laboratories and, in fact, more and more companies operating in the sector of instrumentation for laboratories and the chemical industry are supplying instruments and equipment that ensure reliability, quality and precision; for information about one such company, click here; www.achelit.it.

What are the advantages of laboratory automation for companies?

Automating laboratory processes leads to significant benefits for the companies themselves, in terms of both time and cost savings.

All manual work is given over to highly efficient machines and robots that use state-of-the-art technology, so the risk of errors is practically reduced to zero.

Automated systems are able to perform very high-throughput screening at a rate that would be impossible for humans. Thus, maximum speed is perfectly combined with extraordinary precision.

Within pharmaceutical companies and laboratories, in-house human resources are optimised so that they can focus only on their tasks and make use of their skills and expertise in the field, without wasting energy on long and boring operations.

This process significantly reduces waste, while also cutting unnecessary costs for companies, so they

can allocate more of their budget to new equipment or more in-depth research.

And there is one final aspect to consider that is often underestimated: **occupational safety**. By keeping human intervention to a minimum, the exposure of operating personnel to pathogens, chemicals and potentially harmful agents can be reduced. This results in a flawless and precise end result, with maximum protection and safeguarding of personnel.

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