

Process Analytical Technology: Smart tools or expensive toys?

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If we talk about the current trend of digitalisation and automation in Pharma and Biotech industry, Process Analytical Technology (PAT) and advanced data analysis are indispensable tools to enhance understanding and control of manufacturing processes. The consistent application of online, inline and at-line Analytics over the whole life cycle of a production process may provide substantial benefits like reduction of production costs and increase of operational efficiency. Minimize variations in manufacturing steps, optimisation of cycle times and process quality, increase of process automation and safety are typical improvements, which can be achieved by applying PAT instead of conventional offline lab analytics.

The use of process analytics is not worthwhile in any case, as the investment costs of a PAT installation can be very high, depending on the analytical technology and the efforts to achieve GMP compliance. This is why the business case should be an integral part of the systematic evaluation of a potential PAT application in specific production steps.

An approach for an efficient PAT implementation strategy is discussed; potential benefits and improvements of different process analytical installations in manufacturing plants at Lonza Visp are presented.