This multiauthor review article aims to bring readers up to date with some of the current trends in the field of process analytical technology (PAT) by summarizing each aspect of the subject (sensor development, PAT based process monitoring and control methods) and presenting applications both in industrial laboratories and in manufacture e.g. at GSK, AstraZeneca and Roche. Furthermore, the paper discusses the PAT paradigm from the regulatory science perspective. Given the multidisciplinary nature of PAT, such an endeavour would be almost impossible for a single author, so the concept of a multiauthor review was born. Each section of the multiauthor review has been written by a single expert or group of experts with the aim to report on its own research results. This paper also serves as a comprehensive source of information on PAT topics for the novice reader.

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