

From Science to Value - How to establish a PAT strategy in an organization?

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Process Analytical Technology (PAT) has long been recognized as a powerful framework for building deeper process understanding, enabling real-time monitoring, and ultimately improving quality and efficiency in chemical and pharmaceutical manufacturing. Yet despite its scientific promise, many organizations struggle to move beyond isolated experiments and early-adopter enthusiasm toward a coherent, sustained PAT strategy. The gap between proof-of-concept and organizational value is where most initiatives stall.

This talk reflects on that gap through the lens of practical implementation. What does it actually take to go from a compelling PAT result in the lab to a technology that is adopted, trusted, and delivering measurable value at scale? Beyond spectroscopy and chemometrics, success requires alignment across science, operations, quality, and management.

Drawing on real-world PAT examples and lessons learned from common pitfalls, this talk offers a grounded perspective on how organizations can turn PAT ambition into lasting impact. The goal is not a roadmap, but an honest conversation about what works, what doesn't, and how to make PAT a sustained source of value rather than a series of impressive but isolated projects.



Thomas has studied Chemistry at the University of Freiburg in Germany from 2007 to 2012. He then did a PhD with Prof. Hasenstab-Riedel in the field of inorganic-physical chemistry around matrix-isolation spectroscopy and quantum chemical calculations. In March 2016, he joined Syngenta Crop Protection in Muenchwilen/Switzerland as Analytical Chemist. Over the years he has grown and extended his role and is now leading the global PAT activities in AI development and manufacturing and is member of the global analytical leadership team. His key interests are technology leadership, technical capability development and change management.