Flow Chemistry at Novartis R&D: The Impact of Automated Platforms and Self-Optimizing Systems in Modern Synthesis

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Continuous flow chemistry in pharmaceutical industry has matured during the past years and is nowadays established as a key enabling technology in all phases of the R&D process. At Novartis, automated synthesis platforms and self-optimizing systems using flow chemistry devices were implemented in early phases of R&D to rapidly optimize reaction conditions and to accelerate the development of new drug candidates. With the help of some examples and case studies, strength and weaknesses of those systems are discussed and the benefit for the various phases of R&D will be highlighted.