Recipe-oriented Modeling and Scheduling Environment for Entire Process Development Workflow

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This paper describes a number of new features for supporting data management, a completely re-written in C# new user interface of high customization, and a generic approach for advanced schedule as industrially applicable general solutions within Aspen Batch Process Developer (ABPD), designed to employ over the entire life cycle of processes from early synthetic route selection to full-scale manufacturing. A new generic approach for overcoming a set of fundamental computational limitations of sequential modulus paradigm is developed and implemented, involving shared intermediate storage, shared-exclusive scheduling and conditional logic schedule parameters such as start-after and parallel-delay constraints, in combination with a set of step-level scheduling options. This implementation provides interactive and flexible control of schedule, enabling both rigorous modeling and advanced scheduling within a unified framework, which facilitates an appropriate balance between an incorporation of human expertise and automatic scheduling.