

# Design and Synthesis of Multipurpose Batch Plants Using a Robust Scheduling Platform

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## Abstract

The increasing interest in multipurpose batch plants is evident, because of their inherent flexibility to cope with an ever changing market environment. These plants are easily reconfigured for product modifications, to cover a wide range of operating conditions. They are also suitable for producing different products within the same facility. In spite of this advantage, the design, synthesis, and scheduling of multipurpose batch plants can be a challenging task. This paper addresses design, synthesis, and scheduling simultaneously. It is known that the scheduling platform employed has a significant impact on the computational performance of the overall model in the design and synthesis of batch plants. The recent scheduling model that results in better computational efficiencies is extended to incorporate design and synthesis. Computational studies are presented to illustrate the effectiveness of the proposed model. A comparison with earlier formulations showed that better computational times and objective functions were obtained by this work.