Parameter Estimation for Chemical Process Scheduling Problems

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While there have been many studies on scheduling in chemical process, most of the times the uncertainties are neglected in the scheduling problems. In this study, process parameter is estimated for the uncertain scheduling environment. Among various forms of uncertainty such as equipment breakdown, process yield and demand, process time uncertainty is the main target. The deviation from the initial schedule is measured to estimate the parameters for the next schedule. Kalman filter is used as an estimating tool, to update the future schedule by analyzing initial deterministic model. Proposed technique is developed to obtain an optimal schedule that maximizes the profit, minimizes the deviations in the schedule and satisfies existing and future requirements. Model is applied to real processing facility and improved results are shown.

Acknowledgement: This work is supported by the BK21 Project and Center for Ultramicrochemical Process Systems sponsored by KOSEF.