

A Decision-Based Approach to Plantwide Control Structure Synthesis

by

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Abstract

The concept of plantwide control structure synthesis is not a new concept to the chemical process industry. The approaches used can be classified into two main categories, a process engineering approach and a mathematical-oriented approach. Within each category, there is no consensus as to one approach, which is not surprising given the size, complexity, and objectives of the *plant*. The work describes a modular decomposition of the plant flowsheet that is assessed based on a decision-based approach - the analytical hierarchical process, that consistently evaluates the merit of the decomposition among alternatives, and between neighboring modules to arrive at a prioritization of objectives for each module and for the integrated plant. An example system is provided to demonstrate the approach.

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