“Plantwide control - A review and a new design procedure”

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Abstract: Most (if not all) available control theories assume that a control structure is given at the outset. They therefore fail to answer some basic questions that a control engineer regularly meets in practice (Foss 1973): 'Which variables should be controlled, which variables should be measured, which inputs should be manipulated, and which links should be made between them?' These are the questions that plantwide control tries to answer. There are two main approaches to the problem, a mathematically oriented approach (control structure design) and a process oriented approach. Both approaches are reviewed in the paper. We also provide some definitions of terms used within the area of plantwide control.

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[16] Lei Zhao, Finn Are Michelsen and Bjarne Foss (2012), doi:10.1016/j.compchemeng.2010.11.006
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[29] Nov 2013: MIC reaches 3000 DOI Forward Links. The last 1000 took 2 years and 5 months.
[30] May 2016: MIC reaches 2000 DOI Forward Links. The first 1000 took 34 years, the next 1000 took 2.5 years.
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[41] Jan 2012: Follow MIC on your smartphone by using the RSS feed.
Module IV economic plantwide control design. Procedure and case studies. Such a control system is appealing in that its basic regulatory structure remains fixed regardless of the operating region while also avoiding the need for complex over-ride controllers. For dynamic reasons, the new CV should be close to the MV (constraint controller setpoint) that becomes available. Table 14.1 neatly summarizes the step-by-step implementation of the four-step economic plantwide control system design procedure to this process. A reasonably detailed explanation of the steps is provided in the following.


There are many approaches to plantwide control as discussed in the following review paper: T. Larsson and S. Skogestad, “Plantwide control: A review and a new design procedure” Modeling, Identification and Control, 21, (2000). The following paper updates the procedure: S. Skogestad, “Economic plantwide controlâ€”Book chapter in V. Kariwala and V.P. Rangaiah (Eds), Plant-Wide Control: Recent Developments and Applicationsâ€”Wiley (2012). More information: All papers available at: 59 PC TC. Modeling, Identification and Control 2000. Plantwide control - A review and a new design procedure, DOI: 10.4173/mic.2000.4.2. Truls Larsson,Sigurd Skogestad. These are the questions that plantwide control tries to answer. There are two main approaches to the problem, a mathematically oriented approach (control structure design) and a process oriented approach. Both approaches are reviewed in the paper. We also provide some definitions of terms used within the area of plantwide control.