Poster Session
14-15th, July

Holistic Controller Design: Safer and More Profitable Plants

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With the increased emphasis on safety and environmentally friendly technologies, there is a growing need to extend the application of control. Not only must a control strategy be able to stabilise and maintain a process at its desired values, but it should also be able to assess control performance, detect process faults, diagnose and isolate the root causes, implement appropriate controller design changes, and perform lifetime maintenance. In order to accomplish this goal, there is a need to integrate the different aspects of the control strategy into a single comprehensive framework. The main areas of research include dealing with historical data, data mining, and soft sensor creation. The incorporation of this information into a single framework will allow for better and more efficient plants that can react to or even anticipate process changes.