

# Indirect Process Control Using Electrical Network Parameters for Enhanced Automation in Chemical Technologies

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Automation and real-time monitoring are hampered by the fact that traditional methods of controlling operations in opaque reactors typically rely on expensive and invasive sensors. This presentation discusses a low-cost, non-invasive technique that provides useful insights into process dynamics using electrical energy analysis. We demonstrate the application of electrical parameter fluctuations such as power and current as indicators of significant process changes in opaque reactors. This method could be of great benefit to the High-Tech industry, where precise process control is required to produce consistent, high-quality products. In our evaluation of the advantages and limitations of the method, we emphasize how the approach can increase production efficiency while reducing the need for human intervention in process control.

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