Abstract

This paper presents a decoupled control strategy using time-varying sliding surface-based Sliding Mode Controller (SMC) for a multivariable nonlinear system as an Ammonia Reactor system. The decoupled method provides a simple way to achieve asymptotic stability by dividing the system into three subsystems. Simulation results are presented for SMC comparing with a traditional PID controller. Then, the system is subjected to temperature disturbance to demonstrate the effectiveness and robustness of the controller.
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Decoupled Sliding Mode Control for a Multivariable Nonlinear System


Index Terms

Computer Science

Control Systems

Keywords

Sliding Mode Controller  Ammonia Reactor  Decoupled system  PID controller