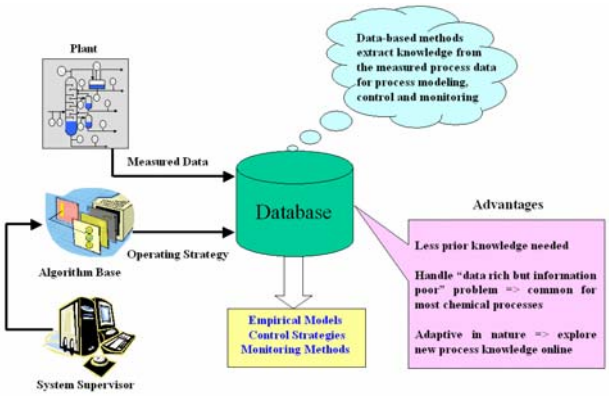
Laboratory for System Identification and Control

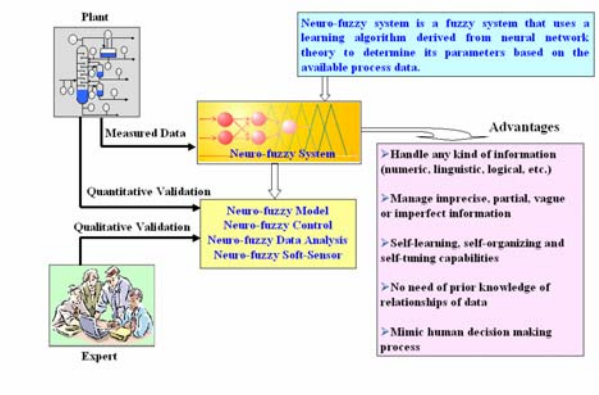
Nonlinear Process Control

Chemical and biochemical systems are often nonlinear in nature and contain high-order dynamics and dead time, all of which diminish the performance of linear controllers like PI controllers. Our research focuses on developing effective methods for nonlinear process modeling and control.



Ongoing Projects

- Data-based Controller Design Methods
- Neural-fuzzy based Controller Design Methods
- Empirical Modeling for Nonlinear Systems



Decentralized Control Systems

In the chemical process industries, many control schemes are made of simple decentralized PI controllers. Main objective of our research is to develop effective methods for controller design and control structure selection.

Ongoing Projects

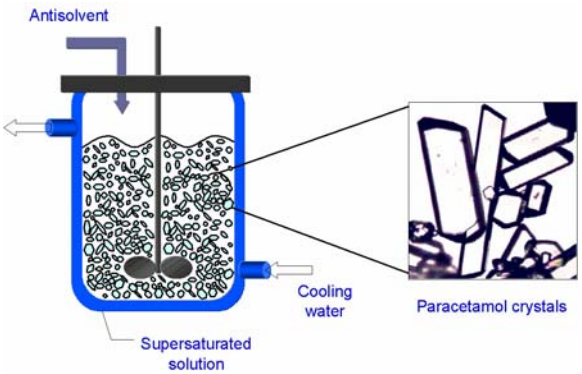
- Design Methods for Decentralized Control Systems

Pharmaceutical Crystallization

Major advances in in-situ sensor technologies have enabled the modeling & design of control strategies for pharmaceutical crystallizers.

Ongoing Projects

- Modeling and Control of Polymorphic Phase Transitions in Pharmaceutical Crystallization



Pharmaceutical Crystallizer

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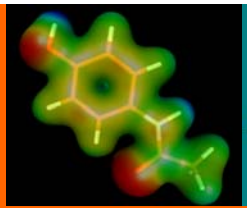
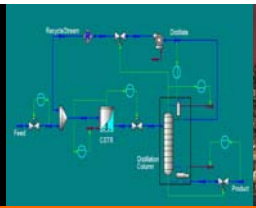
ChemBioSys @ NUS


Engineering Systems from Molecules to Multinationals